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**MANAGING AND CONTROLLING
AIRPORT CONSTRUCTION
PROJECTS: A STRATEGIC
MANAGEMENT FRAMEWORK FOR
OPERATORS**

NASSER ALNASSERI

PhD

2015

Vol. 1 of 2 (Main Text)

MANAGING AND CONTROLLING AIRPORT CONSTRUCTION PROJECTS: A STRATEGIC MANAGEMENT FRAMEWORK FOR OPERATORS

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MSc Construction Project Management

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the requirement of the University of
Northumbria at Newcastle for the degree
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ABSTRACT

During the last few decades, strategic management and strategic human resource management theories have received a great deal of attention in many industrial sectors. The complex and constantly changing business environment has driven large construction companies more than ever before to reflect on the interplay between their organisational strategies and their strategic management processes, tools and techniques. This is despite the great value of human capital for an organisation's strategic flexibility within different sets of environmental evolutions. This includes people in various positions, administrative, professional, managerial and unskilled, as well as numerous project stakeholders. Several researchers are increasingly interested in applying strategies and human-related studies within the construction industry; however, an integrated study of these two factors has been notably lacking, particularly in an airport context where the challenges and difficulties of managing construction projects are high. This doctoral thesis contributes to the existing literature by exploring the unique characteristics of an airport construction environment, along with reporting the findings of the impact that different airport ownership forms have on construction management efficiency. Through integrating numerous theories and concepts associated with project strategies, strategic human resource management and various efficiency management attributes, this research project presents a unique strategic framework that offers a structured approach to support airport holding bodies. Research primary data were collected following semi-structured interviews with senior construction project managers of airport operators within three distinct airport organisations in terms of their ownership structures. The resultant findings provide insight into the many differences between the case studies in term of project management practices. Furthermore, an explanation of the key practices that influence the occurrence of project success were identified. This doctoral investigation identified there is a need for flexibility and scalability aligned with adopting the strategic framework and engaging its conceptual application with actual management and controlling practices. In essence, the research framework was developed for each category of airport organisation, where an airport organisation is encouraged to focus its efforts on managing the most important framework components which are needed for effective improvement of management practices and, accordingly, to achieve expectations. The resulting theoretical framework provides a unique tool for airport operators to apply their project management knowledge effectively in order to realize complex projects and to secure potential efficiency gains. This study therefore provides a

novel theoretical insight into the strategic management of human resources during airport construction projects. The primary application of the strategic framework is concerned with managing and controlling existing airport construction projects, particularly refurbishment or extension projects, however this could be also applied to new airport construction projects where the factors affecting strategic management and strategic human resource management anticipated to be different to those studied during this investigation. This has paved the way for future investigations to be conducted to tackle this dichotomy and further understand the intriguing aspects of airport construction business.

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LIST OF ABBREVIATIONS

APM	Association of Project Management
BBO	Buy-Build-Operate
BIM	Building Information Modeling
BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
BOT	Build-Operate-Transfer
BT	Build-Transfer
BTO	Build-Transfer-Operate
CAA	Civil Aviation Authority
CEO	Chief Executive Officer
CIA	Central Intelligence Agency
CI	Continuous improvement
CM	Construction Management
CM	Construction Manager
CPIc	Construction Project Information Committee
DB	Design-Build
DBB	Design-Bid-Build
DCC	Document Control Centre
DMADV	Define, Measure, Analyze, Define and Verify
DMAIC	Define, Measure, Analyze, Improve and Control
FAA	Federal Aviation Administration
HK	Hoshin Kanri
HR	Human Resource
HRM	Human Resource Management
IT	Information Technology
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
KM	Knowledge Management
LDO	Lease-Develop-Operate
LL	Lessoned Learned

MBNQA	Malcolm Baldrige National Quality Award
MTR	Minimum Technical Requirements
MSPs	Management Service Providers
NIST	National Institute of Standards and Technology
ORAT	Operational Readiness and Airport Transfer
Ox	Organisation x
OxPx	Organisation x Participant x
PDCA	Plan-Do-Check-Act
PEE	Personal Protective Equipment
PM	Project Manager
PMI	Project Management Institute
PMO	Project Management Office
QDAS	Qualitative Data Analysis Software
Qx	Quinquennium x
RIBA	Royal Institutes of British Architects
SHRM	Strategic Human Resource Management
SM	Strategic Management
SWOT	Strengths, Weaknesses, Opportunities and Threats
TQM	Total Quality Management

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DECLARATION

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Faculty Ethics Committee on 13.05.2014.

I declare that the Word Count of this Thesis is 72,057 words.

Name: Nasser Alnasseri

Signature: N.N

Date: 15 June 2016

1. CHAPTER ONE – INTRODUCTION

1.1 Background of the Research Project

The intention of this research project is to explore the relationship that exists between airport ownership structure, project management strategy and effectiveness within the context of a number of case studies centred on the holding bodies of airports and their senior construction project managers.

Among all various types of construction projects, an airport hub is one of the largest development projects undertaken and a complex organisation. In an airport, a number of significant and diverse activities are performed, whether within the airside, terminal or landside zones. Airport owners or statutory bodies/operators need to manage both air transport operations and also real estate investments and various construction projects. A variety of people, project stakeholders, management processes, regulations, tools and techniques are involved with airport activities and contribute to accomplishing construction works. Their management, interaction, communication and development require the application of efficient and effective strategic management tools and techniques in order to achieve project success. Internal project activities, external environmental and human-related factors are considered to be major elements that contribute to a construction organisation's ability to attain high performance levels and secure project success.

Within such environment, organisation and project strategy play a significant role in achieving organisational success through delivering various construction projects effectively and efficiently. This, in turn, requires strategic competence and ability at both the functional and operational levels. Both strategies are influenced, initially, by organisational governance, which comprises managerial and corporate governance. Decisions made by governments on which organisational format their airports should operate determine the business orientation and objective of the airport operator. Structures of ownership and control are varied in the airport industry, whether under public or private participation forms, which eventually affect the performance nature and efficiency of various operational and managerial aspects. Researchers have provided empirical evidences of the link between governance/ownership structure and the performance and efficiency of several dimensions, such as: airport investment, pricing impact on users, economy, environment and society, airport management

and operation implications. However, there is a lack of rigorous evidence of the effects of various ownership forms on improving airport organisations' effectiveness of managing and controlling airport construction projects.

A key strength of the intended PhD study is remarkable. Given the limited contributions of authors in airport construction and past studies of other management research journals, disciplines, institutions, and scientific societies need to investigate the research subject area and introduce new project management approaches. This PhD research project will therefore explore the unique characteristics of an airport construction environment, introduce its management practices and reduce existing ambiguity regarding the meaning of construction business in airport environment.

1.2 Research Vision, Aims, Objectives and Limitations

The vision of this research project is to unite existing theories associated with project and human related strategies within the construction industry and to explore airport project management experiences. The study proposes a theoretical framework and model which aims to strategise and enhance business operations within an airport construction project. The aims of this study are:

- To develop and confirm, through empirical research, a theoretical framework which models the strategies to enhance management practices performance of managing and controlling construction projects within different forms of ownership structures in an airport environment.
- To explore how the theoretical framework components affect the effectiveness of project management strategy through high project performance, its personnel productivity and stakeholders' involvement.

The aims of the research project are realised as a result of successfully accomplishing a number of interrelated objectives, which are listed below:

1. To undertake a detailed and comprehensive critical evaluation of relevant literature regarding organisation, project and human-related strategies, including their application to the construction industry along with airport bodies. This critical evaluation subsequently provides a detailed understanding of the core theories associated with the concept of effective strategic management and its relation to airport construction business environment.
2. To develop the elements of the research's proposed strategic framework and to construct an exploratory model that describes how framework theoretical components correlate project effectiveness and performance, particularly from the perspective of strategic project management practices and project stakeholders' involvement and productivity.
3. To provide empirical evidence and validate the proposed framework by means of semi-structured interviews with senior construction project managers of airport operators within a number of distinct airport organisations in terms of their ownership structures.
4. To present a series of recommendations regarding the practice of managing and controlling airport construction projects within different airport ownership structures, in addition to identifying potential areas for further study and investigation.

Thus, this study contributes to construction project management existing knowledge by providing a comprehensive insight into airport construction characteristics. The new understanding of airport construction business has facilitated the development process of research theoretical framework that applies to existing airport construction projects and could be applied to new projects where airport construction business's complexities and challenges reduce.

Although the research has reached its major aims and objectives, there were some limitations that enable the researcher to identify further research directions. The study limitations are:

1. The study is limited by the lack of information on a public corporation operator where the proposed framework can be investigated and its suitability for all different modes of airport operation can be revealed.
2. The scope of research case study was limited in terms of investigating the proposed framework within single organisation under each airport ownership structure form. Additional airport organisations under each ownership form would add more validity and credibility to the study results.
3. The generalisability of framework components and their importance within different industries is subjected to its potential applications in other industries which has not yet been determined.

1.3 An Overview of the Research Methodology and Method

The research aims to develop and test, evaluate and modify, a strategic model of organisational effectiveness within the current condition of various management practices associated with airport construction projects under different modes of governance structures. It also investigates how the proposed framework affects the context in terms of the actions and interactions of its individuals and management processes, in order to expand existing knowledge, and generate new knowledge or applications for the issues highlighted. The investigation focuses on a number of airport operators, in particular, their construction project management practices. These operators operate under different ownership structures, government department, public cooperation, joint public-private venture and private ownership.

A wide range of literature was reviewed in various areas to obtain the research data and identify possible structure, approaches and components of research theoretical framework. This was initiated by observing and investigating the construction industry in terms of its basic knowledge and practices that relate to strategic management and human resource management. In order to achieve this effectively and efficiently, an investigation of strategic management and strategic human resource management aspects was conducted. The focus

then narrowed to airport infrastructure, particularly, its construction projects, and identified its development needs in terms of both aspects and associated project management practices. In addition, different concepts of management and development strategies were investigated, in order to understand sufficiently the main features and techniques of improvement approaches. This was done within a research context to develop effectively the proposed theoretical framework and enable the study to achieve its goal. The framework would ultimately be tested and refined according to a series of investigation processes within the selected cases in order to draw study conclusions.

Following the development of research strategic framework, the researcher sought to find and collect evidence to confirm the specification of the proposed framework, which was developed as a result of an adequate investigation process. The dominant approach adopted during the entire study was deductive reasoning. However, the research contains inductive elements, such as research hypothesis or testable theory within a framework format. These distinct elements were developed inductively from observing the current condition of the construction industry and, in particular, the airport construction project business environment and related characteristics. The research hypothesis/theory could then move through the new design stage following a deductive testing process in order to be refined, adjusted or rejected in the light of study results. Hence, the research framework was inductively built and deductively tested and refined.

Due to the nature of this study, information related to understanding and investigating various management strategies, associated with airport construction projects within different organisations, is acquired from several key construction personnel. The strategic method adopted in this study is a qualitative approach with dominant attitudinal research characteristics and some exploratory elements. A qualitative method helps the researcher in adequately investigating and understanding his area of interest and achieving the research goal. Furthermore, qualitative data gathered from research participants and were structured and organized prior to evaluation and analysis. Table 1.1 below illustrates the key research methodology which will be discussed further in Chapter 7.

Table 1.1: Key Features of Research Methodology and Method

Research Epistemology	
Philosophy of Knowledge	Interpretivism – Postpositivism Philosophy.
Research Methodology	
Research Approach/Method of reasoning	Deductive Reasoning.
Research Strategy	Qualitative approach with attitudinal research characteristics along with some exploratory elements.
Research Method - Data Collection Approach	
Primary Data	Case study approach, field work data – Questionnaire/personal interviews.
Secondary Data	Academic text books, e-books, electronic and print journal papers, articles, annual airport report, press released, digital airport magazine, documentary materials.
Interviews	
Selected Sampling	A number of airport organizations/operators that operate under different forms of airport ownership structures.
Interview Length	Approximately 90 minutes.
Interview Mode	Face to face interviews.
Interview Location	Workplace of project managers.
Characteristic of Project Manager	<ul style="list-style-type: none"> ▪ Involved or currently working on airport construction projects (expansion, development or refurbishment). ▪ Working at senior project management level.
Sample Size	10-15 project managers in each organization.
Targeted Information	<p>Project strategy adopted to achieve the best value from the project and its delivery features. This is based on best chosen experience of each participant.</p> <p>Examples include: leadership structure, relationship and engagement, behaviors, project team environment, training scheme, internal and external communication and industrial relation.</p>

1.4 Overview of the Chapters

The overall project is divided into nine chapters. Following the introduction, the literature review section includes four main chapters: chapter two, chapter three, chapter four and chapter five. Chapter two begins by discussing the major theories and dimensions of the construction industry and looks at its complex nature. The third chapter is concerned with strategic and project management knowledge and its applications in the construction industry. The fourth chapter examines strategic human resource management theory and how it relates to construction business. The research's main focus, airport construction, is considered in detail in chapter five. The theoretical framework is presented in chapter six. Chapter seven clarifies the research methodology and method adopted by evaluating and explaining the

different research theories and strategies. Chapter eight analyses the results of the interviews and presents the research findings. Finally, a conclusion is drawn in chapter nine along with addressing the research limitations and making a series of research recommendations.

2. CHAPTER TWO – CONSTRUCTION THEORY

2.1 Introduction

In order to acquire adequate knowledge about the major research context, the construction industry, the following sections relate to the conceptual understanding of the construction business environment and various dimensions including sectors, people and methods of delivering its projects. The focus, subsequently, is on the complexity and challenges of the industry as well as the role that management and leadership can play within the construction business.

2.2 The Construction Industry

The construction industry is one of the key industries, in terms of size and impact, for a country's economy (Bennett, 2003). Typically, the construction industry represents about 8% of GDP in developed countries such as the United Kingdom, whereas it contributes up to 5% in some developing countries (Halpin and Senior, 2012; Office for National Statistics, 2014 and Ye *et al.*, 2013). Construction plays a significant role in the overall economy of both industrialised and developing countries, in terms of economic growth and achieving a country's development goals, infrastructure, shelter and employment (Khan, 2008; Anaman and Amponsah, 2007).

The activities of the construction industry are intertwined with individuals' daily lives, e.g. motorways, bridges, water and fuel stations, hospitals, airports, ports, railways, telecommunications, universities and schools, irrigation and agricultural systems, shopping centres, places of work and residence (Gould and Joyce, 2009). Construction organisations are directly involved with these activities, whether through constructing buildings and infrastructure, as well as those who supply materials and equipment for construction works. Within this context, different organisations integrate and collaborate in order to accomplish specific activities. Accordingly, these different organisations and their related work activities form the construction industry. Morton (2008) noted that a construction organisation's size is classified from an economic viewpoint and measured by its turnover (e.g. the giants, large to medium business and small firms). Price *et al.* (2003) explained that, in the UK, large firms have an annual work volume of more than £11.2 million, and consist of over 250 employees.

In contrast, small firms have less than £2.8 million turnover and less than 50 employees. Studies show that almost 70% of construction firms have less than five employees (Halpin and Senior, 2012).

The construction process of a building or infrastructure involves an assembly of a different group of people who define various procedures in a particular site of work. These people come together to achieve a common goal and make the project possible, although they are from various independent businesses and different backgrounds which is, in fact, one of the industry challenges (Gould and Joyce, 2009). Khan (2008) noted that construction works in any country associated with a high level of complexity due to the wide range of stakeholders involved and different activities linked to its business, e.g. manufacturing process, the use of labour, finance, energy, equipment and materials.

2.3 Construction Industry Sectors

Most construction firms concentrate their expertise and focus their business on a particular construction sector, which has its specific manufactures, equipment and materials suppliers and subcontractors. These variations have evolved due to differences which exist among different sectors in terms of project building methods and funding, and how various groups of people interact within a project.

There is no obvious agreement on the classification of construction sectors or how this industry can break down into different categories (Bennett, 2003; Gould and Joyce, 2009; Langford and Male, 2001 and Morton, 2008). Indeed, the construction industry is sometimes considered not as a single industry, but one constituted of several different market sectors. According to Bennett (2003), understanding the nature of the construction industry can be gained from describing numerous types of construction works, which can be categorised into two broad sectors, namely, construction as general building and engineering construction, and further divided into several specialisms as shown in Figure 2.1.

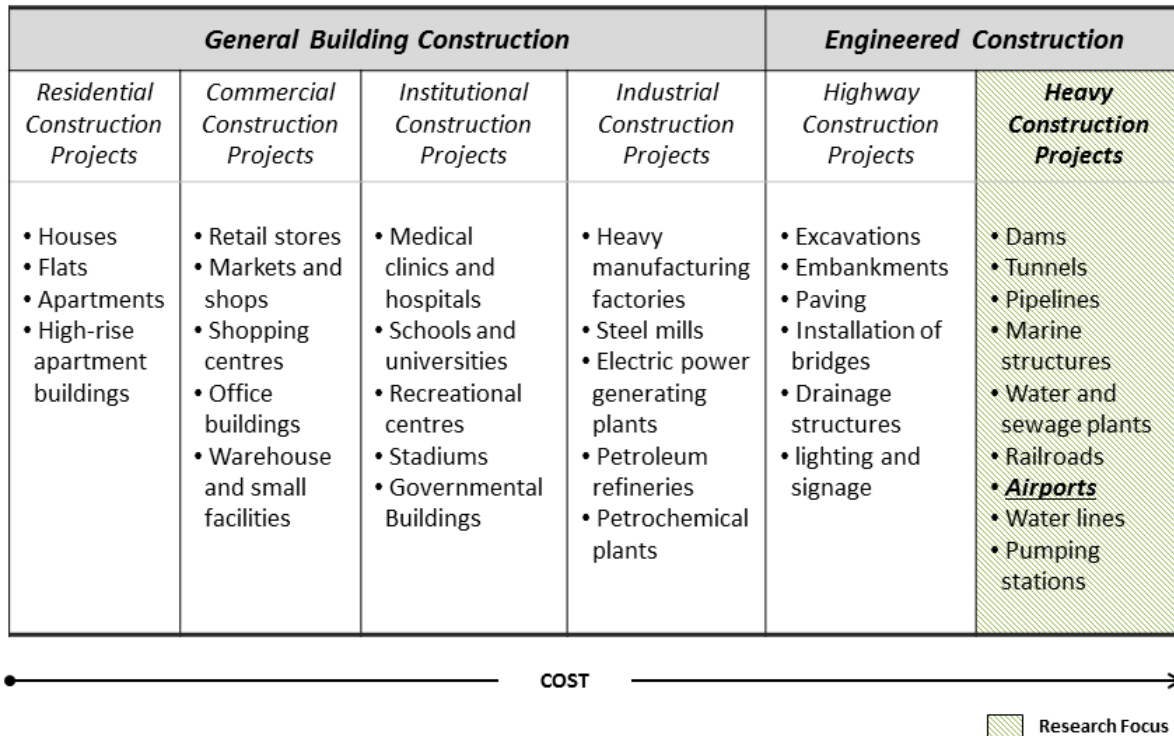


Figure 2.1: Construction Industry Sectors (Bennett, 2003)

However, various construction committees have established different classification schemes for the construction industry in order to offer best practice and support its projects' efficiency and provide comprehensive guidance in term of projects' segmentation and specification as well as production drawings. Examples include CI/SFB, a combination of Construction Industry and the Swedish Samarbetskommitten for Byggnadsfragor, that has been used widely by construction organizations as an industry classification system, and known as construction indexing manual (Thompson, 1999). It was adopted and introduced into the UK by the Royal Institute of British Architects (RIBA) before it replaced by Uniclass, a unified classification system covering all construction sectors, in the late 90s (RIBA, 2013). Gelder (2012) argued that various UK-based industry institutes, represented by the Construction Project Information Committee (CPIc), decided to replace the CI/SFB system due to the following motives:

- CI/SFB was not the preferred construction classification approach among several construction organisations.
- Construction industry changes, e.g. performance issues and building types, were not reflected in CI/SFB system.

- SFB was associated with high level of limitations in terms of computerisation, which led new approaches of classifications to be developed to satisfy and assist construction professionals, particularly those committed to industry advanced technology, e.g. Building Information Modeling (BIM).

Thus, different versions of new classification systems have developed, namely, Uniclass, Uniclass2 and Uniclass2015. Delany (2016) defined the unified classification scheme as “it contains consistent tables classifying items of all scale from a facility such as a railway down through to products such as a CCTV camera in a railway station.” It is an integrated system that is applicable to all different stages of a construction project life cycle, and suitable for use by the whole construction industry, including various types of buildings, landscape, infrastructure and engineering services. As shown in Figure 2.2, the current Uniclass classification version (Uniclass2015) is based on a hierarchical set of 7 core tables and designed with enough flexibility to accommodate industry changes in terms of future classification requirements. Project information can be defined from its broadest view to the most detailed according to a structured and recognised code standard. The 7 key codes within the classification system consist of several pairs of characters, namely, table code, group, sub-group, sections and object (see Appendix A).

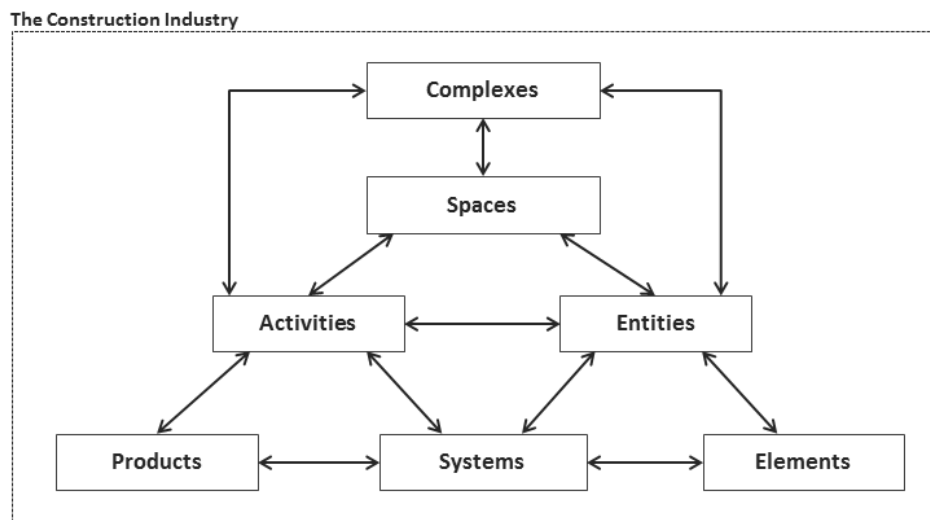


Figure 2.2: The Construction Industry Classification Table (Delany, 2016)

- Complexes: this offers the overall description of projects, e.g. an airport project, rail networks project or University campus including all related facilities.
- Entities: this distinguishes different projects within the main complex and provides activities that occur in various areas.
- Activities: this provides a definition of different activities that occur in a space within the complex or entity.
- Spaces/Locations: this clarifies different spaces where the activities take place, and whether a space is suitable for one or more activities.
- Elements: this is related to the main components of a building or its structure.
- Systems: this provides element information in term of the collection of its components.
- Products: this specifies the single products that are used to construct a system.

2.4 Project Participants

Construction projects begin with basic ideas, which must be translated into visual forms before transforming them into a tangible product. Project owners generate those ideas, and designers then develop them prior to the production and delivery process that is undertaken by contractors. This is a simple mechanism that defines the construction project cycle. However, at closer inspection, it is more complex (Gould and Joyce, 2009).

As mentioned in the previous section, there are various major classifications of construction works. In addition, distinct specialties have a significant role in construction's further subdivisions. Within the diverse construction sectors many people are involved in construction activities and contribute to accomplishing construction works. Langford and Male (2001) classified three 'players' who have a major impact on construction business, namely, contractors, professionals and consultants. Bennett (2003) and Sears *et al.* (2008) agreed with Langford and Male (2001) about classifying the major actors of the construction process, but they positioned project owners or clients at the top of the classification as a prime key actor. This is due to the crucial role and responsibilities owners have throughout the stages of a project. Dorsey (1997, cited in Bennett, 2003) has described owners and design and

construction professionals as the eternal triangle of construction projects, where no single project can operate without any of these three participants.

2.5 Project Delivery Methods

Halpin and Senior (2012) highlighted that when different people come together in a construction business, legal agreements are needed for organising and financing a structure or facility for the process, design, construction, operation and maintenance. This agreement represents project delivery method or procurement method which is the owner's decision on how the entire design and construction process will be managed and project team organised. Owner's selection is based on his desire to complete the project on time and budget and to provide the quality expected. Fisk and Reynolds (2010) stated that there is no single organisational structure in terms of participants' relation and management process on all projects.

During the last 30 years, a number of different procurement methods have been developed that can be used to complete construction projects and achieve end products (Bennett 2003; Fisk and Reynolds, 2010; Hendrickson and Au, 2000; Langford and Male, 2001). Gould and Joyce (2009) highlighted the most common strategies, which are design/bid/build, design/build and construction management (see Appendix B). Project owners may have a combination of these methods and they must ensure the proper choice for various projects, but a decision is not always simple and clear.

2.6 Industry and Project LifeCycle

Langford and Male (2001) stated that industries, products and services, regardless of the differences between them, are related in terms of the series of stages in a lifecycle which they have to go through. In general, in any industry there are four life stages. The development stage is the initial step where ambiguity and risk are high. Following this, the growth stage takes place before maturity and then decline, which is the final stage. Henry (2011) agreed with Langford and Male (2001) about the four stages of industry lifecycle except for the term

used for the first stage. Instead, he described it as the introduction stage. He also observed that there are obvious differences between industries in terms of each lifecycle length.

Management researchers have suggested that projects, like industries, go through similar cycles, and attempt has been made to explain the reason behind project life cycle phases. However, referring to the choice of terminology of these stages, Anderson and Merna (2003: 388) observed, “There is a wide variation in use and meaning of almost every term in the project management canon, even within one company.” Even in the construction industry this variation is commonplace. Thus, in order to link construction business with the general lifecycle outlined above, Langford and Male (2001) separated construction products into two categories: the service product and the end product. The former is associated with the different stages of a project lifecycle and leads to the achievement of the end product delivery. Various project procurement processes, e.g. those mentioned in the previous sections, design/bid/build, design/build or construction management represent service product inputs. End product refers to the complete outcome, whether product or service, delivered to the client. An alternative view of construction project stages is presented by Sears *et al.* (2008); planning and definition of construction projects is the first stage, followed by the design stage and then procurement, with construction being the final stage. Numerous other methods of categorising the construction project process have been designed and developed (Bennett, 2003).

One of the most developed and updated models for the building design and construction process is the RIBA plan of work. Indeed, it reflects the complexity of delivering construction projects (see Appendix C). However, the plan of work is suitable for all types of delivery methods and any size of project and practice, and has unique functions and characteristics of eight different stages described by eight key tasks (RIBA, 2013).

2.7 Complexity of the Industry

Baccarini (1996: 202) proposed a definition for project complexity as “Consisting of many varied interrelated parts and can be operationalized in terms of differentiation and interdependency.” He emphasised that when dealing with project complexity, it is vital to

distinguish clearly between numerous types of construction works and actual project stage.

It was previously considered the major dimensions of the construction industry. Construction works are complex and no two projects can be exactly the same. Construction has a great number of different activities and their interactions vary considerably from one project to another. Project stakeholders have different goals and objectives, but they also have to collaborate and communicate as a team and work towards accomplishing construction projects successfully.

Construction projects are arguably the most complex among various projects within different industries (Baccaribi, 1996; Giado, 1996; Walker, 2007; Xia and Chan, 2011). Their complexity arises from different factors: organisational, systematic, technological, informational, environmental, social, legal or economic. Bartelsen (2002) pointed out three perspectives of complexity in construction. Firstly, project delivery process and management procedures tend to be more complicated than project management processes in other industries. The fragmented nature of the construction business is extremely high, where each project is divided into several parts and different activities. Furthermore, construction firms rely on human power, whether in dealing with managerial process or on-site activities. Large numbers of workers often socially interact and cooperate within a construction project, where they vary in knowledge and skills and may not be permanent staff at the construction site. Instead, they work for specific organisations and are hired by another. Therefore, divided loyalty issues arise as another source of construction complexity.

Gidado (1996) further noted the complexity of the construction industry. He argued that there is complexity in construction for several reasons: the resources employed, the external factors of the construction or its environment, competence of both scientific and technological knowledge and the range of interactions that exist between different stages of the construction project life cycle.

As previously mentioned, the construction industry plays a crucial role in the overall economy of most countries (Bennett, 2003). Indeed, operating in the global arena is assumed

today to be one of the major tools regarding economic growth and the increase in countries' capital flow. Consequently, construction industries in different countries, whether industrialised or developing, have included another facet of construction complexity when operating internationally. This is due to the actual differences in regulations, beliefs, cultures, behaviours and perceptions (Akiner and Akiner, 2009; Lewis, 2007; Ngowi *et al.*, 2005; Raftery *et al.*, 1998).

2.8 Managing and Leading the Construction Project

Baccarini (1996) and Gidado (1996) argued that in order to deal with complexity, the concept of integration must be effectively applied by establishing a good body of management knowledge (that is, coordination techniques, communication tools and control factors) along with efficiently implementing the managerial functions by providing an adequate and well-studied planning and control method.

Henry (2011) stated that several plans of management actions and strategies are open to organisations that operate under various challenges of construction. He argued that cooperation between organisations focuses on “how to make things rather than what to make, and how to deliver services rather than which services to deliver” (Henry, 2011: 296). Thus, the managerial processes or strategies that help organisations to handle complexity and to adapt to challenges and overcome obstacles are important factors in order to achieve goals and accomplish tasks effectively and efficiently.

As in most industries, construction needs project managers who provide efficient platforms for fast-track projects and effectively implement different techniques and practices to fulfil organisation strategies and achieve targets (Gould and Joyce, 2009). These project managers need individuals who can implement effective project strategies, satisfy different stakeholders' targets and objectives and provide a healthy collaborative environment to complete projects successfully. Project managers must also provide confidence among project team members, along with commanding a high level of respect.

2.9 Summary

The chapter has commenced the process of working towards an original contribution to theoretical knowledge and understanding. This has been achieved by characterizing the elements of theory related to the construction industry that are important to the realisation of the research aim by addressing the context of study prime objective. In particular, the conceptual understanding of the construction business environment, from the perspective of various dimensions, including industrial sector, people and methods of delivery, has been developed in order to identify effective practices of construction project management. Furthermore, the role management and leadership are able to play within the construction business sector have been identified and discussed from the perspective of effective construction management practice.

As construction is very complex and dynamic, it is dependent upon a number of strategies and plans, whether at the organisational, business or project level. Construction complexity is not only seen in different types of projects, stakeholders' diverse interests and various project delivery stages, but also from an industry, organisation and social perspective as well. Different strategies at different levels within an organisation provide a solid platform for achieving goals and objectives, and facilitating project management activities for various managers. It is emphasised that each organisation is different; likewise, each construction project is unique, and those differences are based on strategies that exist at different organisation business levels. Strategic management knowledge provides a foundation for an organisation's plans and systems and plays a very important role in an organisation's framework and identity. It also clearly establishes an organisation's managers' directions and plans for managing its projects. In order to achieve goals in the right manner, appropriate strategies and competent managers, who lead, supervise, motivate and mentor others, are needed.

3. CHAPTER THREE – STRATEGIC MANAGEMENT THEORY

3.1 Introduction

The field of strategic management has dramatically evolved over the last three decades. Its development has been discussed in both empirical and theoretical researches. Strategic management knowledge is considered as an important arena not only in business-related environments, but also various other disciplines. Organisations operate within a complex and constantly changing environment. Indeed, due to political, legal, economic, social, environmental or technological factors, competitive environmental circumstances and the dynamic change in industries have forced organisations to find a successful means of planning and management in order to survive. For Henry (2011), with strategic thinking, it is possible to achieve certain goals and objectives; this is done by addressing the internal and external environment of an organisation. Similarly, Grundy (1998) maintained that strategic management, as a management tool, is powerful when dealing with complex situations and multifunctional tasks. However, in this chapter various dimensions of strategy will be examined, including its concept, definition and formulation and implementation mechanism. Following this, the strategic project management will be considered before investigating the application of strategy in the construction industry.

3.2 Strategy Background

Over the years, the term strategy has been discussed in many areas such as military, business, marketing, politics, sports and media. Indeed, the use of strategy concept is not recent. It has long been studied by various researchers and experts (Grundy, 1998; Henry, 2011; Pitsis *et al.*, 2003). Strategy can be traced back many centuries, and human history has many legends of the use of superior military strategy and stories about great leaders who have defeated others by implementing effective strategy (Henry, 2011). They had a set of ideas to achieve their strategic goal, in this case victory. Military commanders have also utilised strategic thinking for other purposes and their strategic skills were needed to plan for campaigns, dispose of forces and move soldiers from one place to another by strategically deceiving the enemy. Hawkins and Rajagopal (2005, cited in Henry, 2011: 4) stated that in the *Art of War* book, Sun Tzu wrote:

The one who figures on victory at headquarters before even doing battle is the one who has the most strategic factors on his side. The one who figures on inability to prevail at headquarters before doing battle is the one with the least strategic factors on his side ... observing the matter in this way, I can see who will win and who will lose.

3.3 Strategy Concept

Since the 1980s, strategy concept and strategic management have received much attention from management scientists and researchers (Artto *et al.*, 2008; Langford and Male, 2001; Porter, 1996; Jennings, 2002; Jiang, 2009). Despite this fact, it is difficult to find an acceptable definition of strategy by professionals. Different perspectives of strategy adopted by researchers have contributed to the emergence of a number of definitions (Henry, 2011). Mintzberg *et al.* (2009) stated that it is difficult to find a single definition for strategy. Indeed, there is wide agreement about strategy concept in terms of it being a tool that helps individuals to design a plan of action in order to achieve various goals and objectives and also to enhance work performance and competition capability within a complex and competitive environment. Afsar (2011: 144) has defined strategy, in the context of strategic management, as:

Combination of science and arts which increase an organisation's chances of success as it involves detailed planning of each and every variable of the organisation that can help in the achievement of goals and objectives.

Mazzucato (2006) argued that there would be no need for strategy unless there existed different positions to move into and various paths to follow. Accordingly, she described strategy as a process of designing a different set of activities in order to create a valuable and unique position where choosing and adopting an appropriate strategy helps organisations to reach their goals successfully.

The strategy deals with tools and devices that apply to an organisation's activities in order to

meet the desired needs, and also help and guide decision makers to form a set of organisational behaviours guidelines (Langford and Male, 2001). Dikmen and Birgonul (2003) noted that people who lead an organisation, make decisions and set activities at various levels, are supported by a strategy, which works as a vehicle for their coordination. Dikmen and Birgonul (2003) have also linked the implementation of strategy within an organisation to crucial elements that must be considered in an integrated way in order to achieve predefined goals effectively and efficiently. These are:

- **The scope of organisations:** this is related to the service that the firm will offer and/or the product which will be produced, and the selection of a market where they will operate.
- **The environmental changes:** this is primarily associated with the organisation's role, how it positions itself in different environments and adapts strategically to new markets along with designing new business processes.
- **The core competencies:** organisations need to develop their core competencies in order to be able to compete in markets, which, in turn, allow them to achieve competitive advantage. This is done by matching the resource capability of the firm to its activities.

According to Artto *et al.* (2008), goals and plans are the reasoning behind strategy and clarified the difference between an organisation's strategy and project strategy. Each project usually dictates its own goals, plans and objectives along with setting its success criteria. Furthermore, the purpose of its strategy is aligned with a parent organisation's strategy. Thus, a project strategy can be defined as "Direction in a project that contributes to success of the project in its environment" (Artto *et al.*, 2008: 8). The term 'direction' refers to the project strategy dynamic where the various strategic elements of a project establish and define goals, objectives, plans, activities, tools and guidelines, as well as a project's methods, mechanisms, governance systems and controlling factors. Additionally, 'contribute' indicates that the direction is crucial and has an extreme effect on a project. 'Success' occurs when a project is able to meet its goals and objectives according to the predefined success criteria. The use of 'environment' is indication of a unique context that a project must realise by drawing its boundaries, whether inside or outside.

3.4 Strategy Approaches

Over the years a number of strategic management researchers have sought to investigate how strategy is actually formulated (Henry, 2011; Mintzberg *et al.*, 2009; Whittington, 2001).

This has contributed to the emergence of a number of different schools of thought, for instance, cognitive, positioning, planning, cultural, design, learning, configuration and environmental. Indeed, these different approaches are crucial in organisations for efficient strategic thinking and are considered as a key factor throughout an organisation's business lifecycle. Strategy schools provide different ways of formulating an organisation and project strategies, each varying in terms of perspectives, dimensions and implementation process. Various schools of thought also clarify the early steps of an organisation's strategy and actions needed (Henry, 2011).

Mintzberg *et al.* (2003) categorised 10 different schools as 'prescriptive' or 'descriptive', and also argued that the various schools do not represent different approaches of strategy formulation. Instead, the majority seem to be strategy aspects or different stages of the strategy formation process. Henry (2011) identified two broad perspectives of strategy formulation: the design and learning schools (See Appendix D).

3.5 Vision and Mission

Chinowsky (2001) states that organisation endeavours in all deferent industries start with establishing several statements that draw a business outline and provide members with a direction they need to operate in a particular environment. However, after choosing a suitable approach strategy, an organisation has the information required to form a firm's vision, mission and values. Later, the work performance of a firm is judged by evaluating the extent to which the vision and mission are achieved. Hence, vision, mission and organisational values are the root of successful organisations; this is, when managers and leaders efficiently define and apply them effectively in a working environment and achieve various project objectives (Scott *et al.*, 1993). By creating a well-defined vision, mission and values, direction can be clearly and concisely conveyed to individuals along with informing other groups and different stakeholders of crucial dimensions in the organisation's business practices. Charles *et al.* (2008) highlighted that in order to formulate these vital elements, a

definition of an organisation's business needs to be addressed. This definition deals with what the organisation's business is, why it exists, what it seeks to accomplish and who its customers are, and, ultimately, delivers it to its members.

Henry (2008) stated that the founder of a business is often highly associated with the vision statement formulating stage. Hitt *et al.* (2007) suggested that an effective vision statement can be generated when top-level managers meet with organisation personnel, who work in different departments, key suppliers and targeted customers or users. Researchers in different organisational studies noted the involvement of these interest groups in formulating a process closely associated with high performance level and chance of success (Charles *et al.*, 2008). An environment with such a vision statement is capable of reflecting organisation values on all its employees. However, values are traits, tenets, beliefs and qualities that are considered within an organisation and encouraged in individuals in their interpersonal interactions, actions, decisions and work behaviours (Henry, 2008).

An organisation's mission, on the other hand, focuses on the organisation prime function, which also indicates how an organisation will achieve its vision. Henry (2008) stated that the mission statement of an organisation answers these questions: Why does an organisation exist? Which types of customers is an organisation intended to serve? Henry (2008) defined it as a natural part of communication between an organisation's internal and external business environment.

Charles *et al.* (2008) linked organisational values to the achievement of a mission statement, where individuals or groups obtain direction or guidance of conduct as regards the kind of organisation they should build, in order to help achieve a firm's mission. Consequently, values seem to impact every aspect of an organisation so that every member needs to understand and ultimately contribute to the achievement of desired objectives.

Thus, vision, mission and organisational values provide an overall image of an organisation's business to all personnel, stakeholders, customers and suppliers. These tools should be precise as they provide the required foundation to organisations in order to formulate and

implement their strategies (Langford and Male, 2001). Hitt *et al.* (2007) stated that an organisation with an inappropriate vision and mission statements is more likely to fail in overall business than that which has suitable, clear and precise statements.

3.6 Strategic Management Process

An integrated strategic management process within organisations is associated with several stages that enable firms to implement effective management and achieve their objectives and business success. Researchers and management specialists have no agreement regarding the number of stages that the strategic management process consists. However, there is remarkable agreement about the components of the strategic management process. David (2011) offered three stages of strategic management process: strategy formulation, strategy implementation and strategy evaluation.

3.6.1 Strategy Formulation

The first stage of the strategic management process includes vision and mission development, defining an organisation's value, determining internal strengths and weaknesses, identifying and analysing external opportunities and threats. Also, at the formulation stage, long-term objectives are established, strategies to achieve these objectives are defined and agreed strategies are identified. Various dimensions at this stage are also considered by strategists: resource allocation, the business result that an organisation seeks to achieve, an organisation's business direction including products/services, markets and resources over a period of time, international market opportunities and whether to form a joint venture or merge with others.

During the formulation stage decision makers should compose several strategies of different hierarchical levels within an organisation, namely, corporate, business and operational level, as shown in Figure 3.1. Top managers are primarily involved in formulating corporate strategy; at the same time, it is encouraged involving as many employees as possible in formulating business and operational strategy (David, 2011).

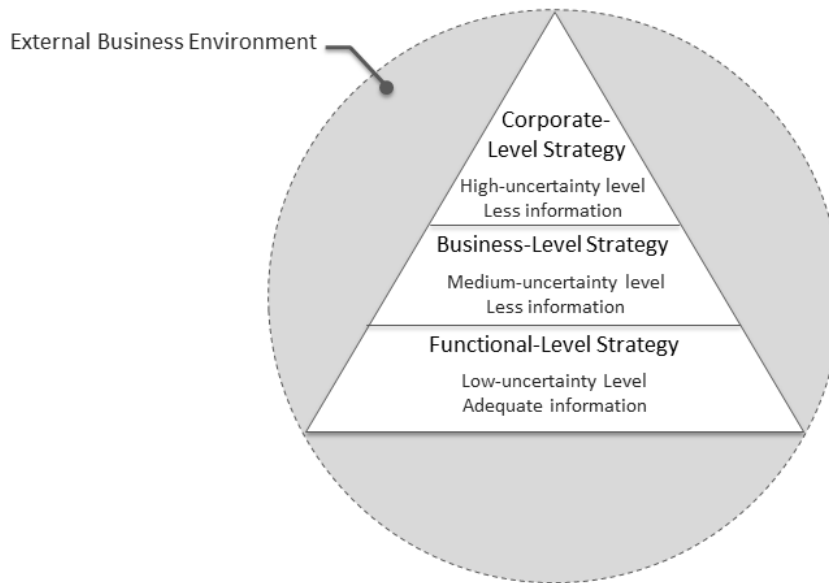


Figure 3.1: The Hierarchy of Organisational Strategies (David, 2011)

3.6.2 Strategy Implementation

At this stage, a large number of an organisation's individuals are involved in establishing its short-term objectives and policies. The task of various departments or teams is to develop a detailed action plan in order to achieve the developed short-term objectives. Establishing short-term objectives contributes to formal resource allocation activities including financial, physical, human and technological. An organisation, at this phase, needs to create an effective organisational culture, motivate employees and ensure that individuals understand its culture and objectives. Another important aspect is developing employees' interpersonal skills and encouraging their involvement, personal discipline and commitment. This is in order to ensure a successful strategy implementation stage (David, 2011).

3.6.3 Strategy Evaluation

The final stage of strategic management requires an organisation to review its strategies, measure performance and take corrective actions. The strategy evaluation stage enables managers to know when specific strategy is not working well as strategies are subject to modification and change due to the unstable nature of external and internal environment. Accordingly, an effective and efficient decision-making process must be associated with this phase. The strategy evaluation stage is very crucial for an organisation to ensure its

continuous improvement as today's success is not a guarantee of future success (David, 2011).

Bratton and Gold (2012) described the strategic management process as a cycle of various events that follow one another. They divided the strategic management process into five steps as shown in Figure 3.2.

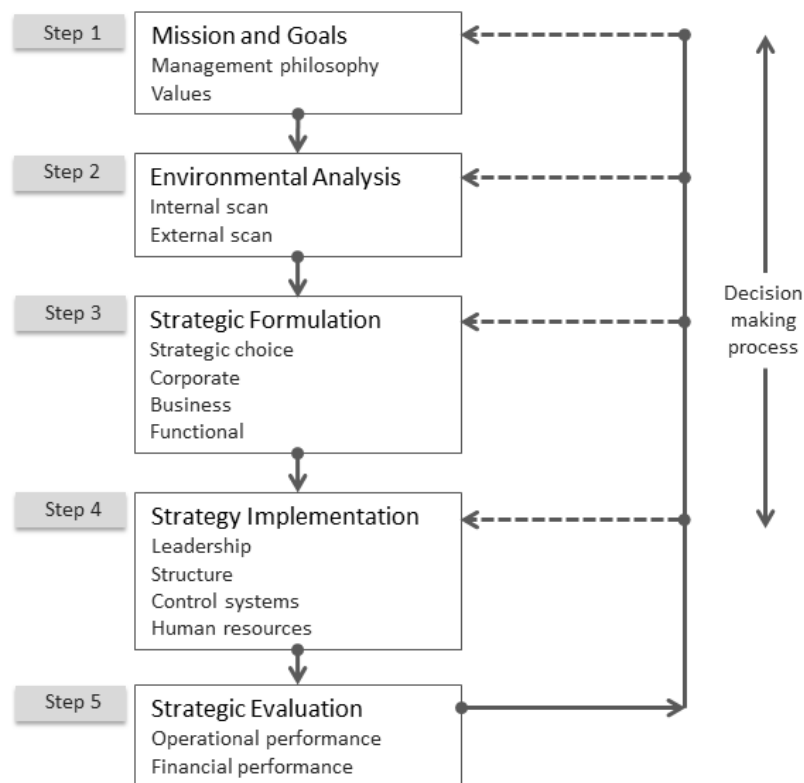


Figure 3.2: The Strategic Management Process (Bratton and Gold, 2012: 41)

Communication, collaboration and interaction between managers and other individuals, at all hierarchal levels, is a vital factor to support a strategic management team to perform effectively and efficiently. Not all large organisations, along with most small business entities, have strategic business units; instead, they have only corporate and operational level, so corporate and operational managers and employees should be highly involved in formulating, implementing and evaluating a firm's strategic management. As shown in Figure 3.3, David (2011) illustrated how a proper strategic management process enhances

communication and emphasises the importance of communication between managers and employees and, therefore, influences the success overall of the strategic management process.

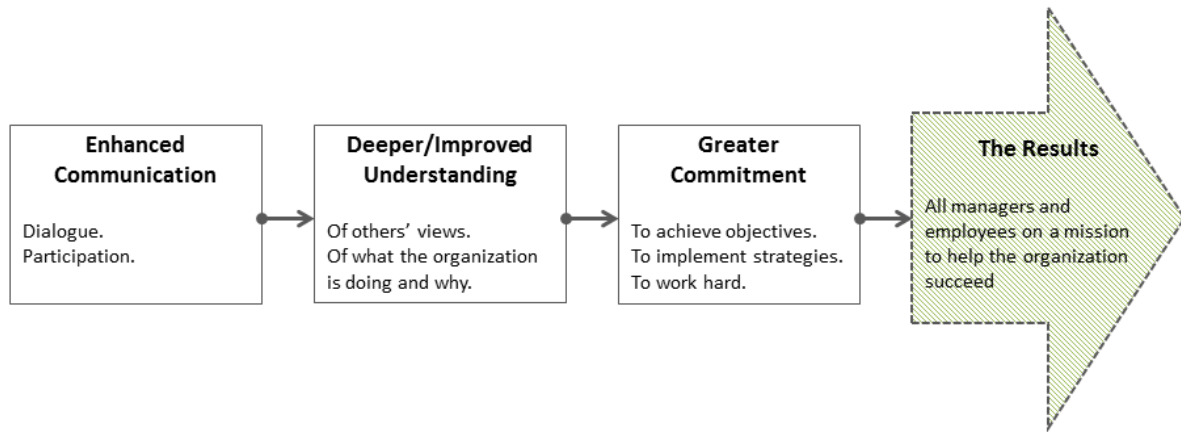


Figure 3.3: Strategic Management and its Communication Benefit (David, 2011: 16)

3.7 Characteristics of Strategic Management

Every organisation has its own strategy whether it is intended as this could be unstructured and informal. Working in a current management environment including competition, challenges and complexity are not possible without the adoption of strategic thinking (Pearce and Robinson, 2003). Many organisations, small and large, public and private, profit and non-profit making, in all industries, have realised the importance of strategic thinking and how it benefits their management procedures (David, 2011).

An effective implementation of strategic management can help develop and transform organisations, and bring satisfaction to an organisation's shareholders and a project's stakeholders. Rudd *et al.* (2008) noted that an organisation's strategic flexibility in coping with environmental changes and turbulence is crucial for its effective performance. Indeed, by using a proper strategic management process, organisations will be more proactive than reactive in shaping their future. However, strategic management is not a guarantee of business results or organisation success; the inefficient conduct of strategic management can place a company in a position of failure. Langley (1988) argued that focusing on the strategic management process and its activities is more important than document and paper activities

among top executives, in order to realise the various benefits of strategic management. David (2011) emphasised strategic management dialogue and other processes including educating, learning, helping and supporting activity. Operation managers and other people who will execute strategies should be involved in developing strategic plans; this is, in fact, a key to success.

Organisations that implement strategic management thinking are more profitable than firms that do not (Smith, 1998). Strategic management significantly improves the financial results of an organisation, develops and strengthens its market position and increases its competitiveness. Besides the financial benefits of strategic management, Greenley (1986, cited in David, 2011) mentioned various non-financial benefits to organisations that implement strategic management as shown in Figure 3.4.

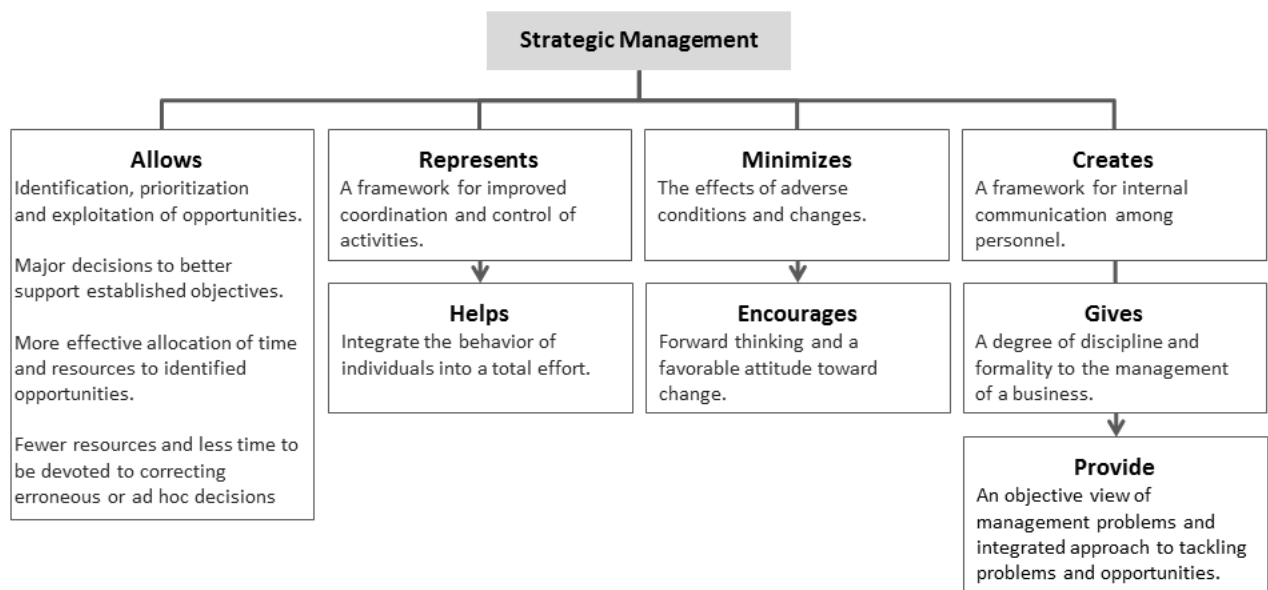


Figure 3.4: Benefits of Strategic Management (David, 2011: 18)

Some organisations lack strategic management, and others do engage in strategic thinking, but with no support and cooperation from either managers or employees. David (2011) offered some reasons for the lack of strategic management or poor implementation of it:

- Lack of experience or knowledge in strategic management field.

- Poor individuals' reward structure.
- Lack of time for planning.
- An organisation may consider strategic management a waste of time.
- An organisation considers strategic management as too expensive in time and money.
- Lack of effort to formulate a plan.
- Current condition of an organisation's success, so strategic plan is unnecessary.
- Fear of failure.
- Overconfidence from top-managers or decision makers.
- Previous bad experience with strategic management.
- New plan might be a threat for some people.
- Fear of the unknown.
- Lack of trust from employees to upper management levels.

3.8 Strategic Project Management

An organisation's strategy is the big-picture or the vision developed at top strategic management level and implemented through numerous programmes and project strategies at operational level. Project autonomy and the nature of its stakeholders are vital dimensions of a project's business aspects, so project managers and project management teams must understand their position and learn how to support their organisation's business strategy and sustainability and achieve overall business results.

Various tools, plans, techniques and procedures have been developed in the project management literature and can be imported into the project management arena to assist project managers and leaders in managing programmes and projects effectively. However, Williams (2005) noted that even when those different strategies have been carefully formulated, implemented and followed, stakeholders' expectations and the business results of a project could still be unsatisfactory and disappointing. Indeed, a project is about specific activities which follow various strategies to achieve specific goals. Patanakul and Shenhar (2012) argued that project managers in a complex project environment should focus on how they are going to succeed in a specific project environment, instead of talking about plans for achieving goals. This is, in fact, the same principle that generated the concept of strategy in

the military arena. Thus, a good project strategy involves both values, effectiveness and efficiency, which means choosing the right procedures for the right products or services and doing this correctly. Accordingly, the project strategy is associated with any aspect that leads to the actual plan, and which will be linked to a pattern of behaviour that is required for success.

Patanakul and Shenhar (2012: 7) defined the project strategy as “The project perspective, position, and guidelines for what to do and how to do it, to achieve the highest competitive advantage and the best value from the project”. As shown in Figure 3.5, the project strategy definition is based on three major components, namely, perspective, position and guidelines (see Appendix E). These parts are not fixed for all projects; they may be adjusted, change or emerge according to the project’s industry, environment, type, size and project progress. However, all sub-components of the project strategy have to be effectively defined for project teams, and work in an integrated way to support one another. Deliberate and emergent approaches, or a combination of both, can be used in the project strategy formulation stage (Mintzberg, 1987). Patanakul and Shenhar (2012) stated that when flexibility and learning combine with deliberation and control the best approach of the project strategy formulation can be realised.

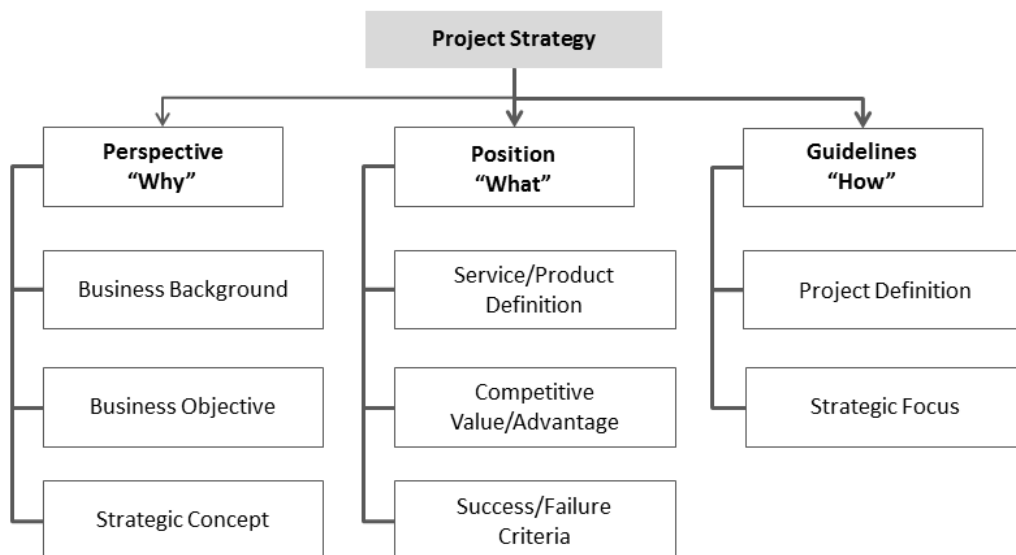


Figure 3.5: Project Strategy and its Components (Patanakul and Shenhar, 2012: 8)

3.9 Strategic Management in Research Context - The Construction Industry

A number of studies have attempted to explore strategic management concept and its related practices within the construction industry. An organisation's competitive advantage, ways of developing and sustaining it, has received construction researchers' attention. Cost/economic theories and strategic ideas regarding organisational and management perspectives have been notably addressed (Betts and Ofori, 1994; Male and Stock, 1991; Langford and Male, 2001). Indeed, different capabilities of strategic management have been developed by many large construction organisations. However, construction professionals, as Chinowsky and Meredith (2000) clarified, have paid significant attention to project management topics, in particular, managerial tools and techniques, even though strategic management application in construction context remains limited (Chinowsky and Meredith, 2000; Betts *et al.*, 1999).

The dominant focus of strategic management research within the construction industry is related to firm's operational strategy (Cheah and Garvin, 2004). Since the early twenty first century, construction firm competence-based approach including internal structure, resources and capabilities have become the main interest of construction management researchers; this is in terms of construction operation and strategy formulation (Chew *et al.*, 2008; De Han *et al.*, 2002; Lampel, 2001). Prior to this, resource-based view and transaction cost economics approaches have been offered by some researchers (Junnonen, 1998; Winch, 1998). Huovinen (2004) noted that, regarding all different schools of strategy, construction business has no established school or tradition in management research.

The construction industry is generally acknowledged to be an economically volatile business sector. Its ability to manage change has been widely studied. This nature is partly the result of its exposure to the dynamic global economy (Ofori, 1990). Chan *et al.* (2004) considered increasing uncertainties in project development stages, budgets and related technology as key factors of the dynamic nature of construction. Over the years a number of studies (for example, Fergusson and Langford, 2006; Toor and Ofori, 2008; Kefela, 2010) investigated and proposed remedies for this tendency. Yet, unexpected circumstances, complexities and difficulties continue to emerge and influence construction productivity and output. Indeed, not all construction firms have survived and been successful in providing competitive advantages. An effective reaction to new opportunities and changing needs, the development

of contractual procedures and use of technological innovation are the reasons for them being static (Betts and Ofori, 1994).

During the last few decades, the construction industry has moved towards a more globalised mode of operation, which has increased primary changes facing organisations, particularly, the project team (Hillebrandt, 2000). There is a need, therefore, for construction firms to change their procedures and practices in order to accommodate the dynamic and fast changing multinational environment. In this regard, different researchers' viewpoints have been described (for example, Moavenzadeh, 1994; Nguyen *et al.*, 2004; Gunhan and Arditi, 2005; Khang and Moe, 2008). This has required the industry to pay particular attention to several influencing factors. Thus, the current business environment has driven large construction companies more than ever before to reflect on the interplay between their organisational strategies and their strategic processes, tools and techniques (Price *et al.*, 2003). Langford and Male (2001), in offering their contingency model of construction strategic management, emphasised the value of human capital for an organisation's strategic flexibility within different sets of environmental evolutions. This includes managerial and labour skills and entrepreneurial and innovative abilities.

Chan *et al.* (2004) concluded that internal organisational activities, external environmental factors and human-related factors are considered to be major elements which contribute to a construction firm's ability to attain high levels of organisational performance and secure project success. These variables are influenced by the organisational strategies of firms (Cheah and Garvin, 2004). However, differences in international construction and its characteristics, as well as cultural diversity, play a crucial role in determining the level of effectiveness of strategic dimensions. Consequently, as Cox and Blake (1991) argued, construction companies need to develop and transform their traditional organisational strategies into multicultural ones. Traditional ways of conducting construction business depend upon the technical and managerial features of its projects, which in fact require management and human resource competences. A number of researchers have shown a growing interest in operating organisational strategies and human resource strategic management. Examples include work published by Price *et al.* (2003), Kazaz and Ulubeyli (2009), Yankov and Kleiner (2001) and Brandenburg *et al.* (2006).

3.10 Summary

This chapter has provided an insight into the roots and dimensions associated with strategic management concepts, in addition to the process involved in strategy formulation. The rationale for undertaking such a review was fundamental and enabled the study to uniquely focus upon the identification of key concepts common to the strategic management body of literature that have not previously been considered within the context of this study.

Additionally, a focused perspective applied to the unique context of this investigation was also undertaken from the view of strategic management related to project management practice. This has led to the development of a novel standpoint with respect to the conceptual understanding of strategic management theories when moving towards the development of an original research framework which will be investigated during this PhD research project.

This will enable the study to move closer to realising the research aim by addressing objective 1.

Strategic management knowledge and the implementation of its philosophies and ideas are highly important for organisations in all industries. Indeed, it is a management process that enhances an organisation's performance, in both administration and operation domain, through improving flexibility, effectiveness and efficiency. However, a proper conduct of its implementation is an essential condition for achieving the various benefits of strategic management. An organisation should obtain information that is related to threats and opportunities by analysing its external environment. It has also to assess the internal environment in order to be able to evaluate its strengths and weaknesses; this is in order to determine where gaps exist and cope with the external environment and associated changes. At project level, project management teams must understand project environment and learn how to deal with project business aspects, in order to support their firm and project strategy, rather than just focusing their behaviour on meeting traditional goals; time, budget and performance.

Lack of strategic management practice is associated with the construction industry, despite the vital role that strategic management can play in coping with the dynamic nature of the industry and an organisation's internal and external environment. The nature of construction

activity and project delivery stages require managing numerous processes and dealing with various teams and stakeholders. This, in fact, emphasises the need for utilising strategic thinking on the corporate, business and operational level of a construction organisation. In such a business environment, management and human resource competences are the major components for achieving an organisation's strategic targets and traditional goals and accomplishing programmes and projects effectively and efficiently. The need for strategic management approaches is evident following the investigation process of the construction sector, which relies upon various teams, fragmented work groups structure and sub-contracted personnel, as well as different structures of project procurement.

Organisations widely use programme and project management as a means of implementing their strategies through a systematic and hierarchical method of managing different projects and programmes. This, accordingly, provides cohesion, integration, visibility and an effective communication. Projects and programmes management tools are considered to be an important vehicle for implementing organisation strategy and adapting to change. However, it is critical for an organisation to have a supportive project management team that understands the various dimensions of its business and is capable of forming, developing and maintaining project and programme strategies. An organisation's individuals must have defined responsibilities, roles and accountabilities along with a healthy working environment, in order to maintain effective production and attain high performance level, which is essential for an organisation's success. These crucial objectives can be achieved through developing and implementing proper people strategies, which should be integrated with an organisation's strategies. Hence, in addition to effective strategic management thinking and associated processes needed for the achievement of an organisation's goals, the success of an organisation depends on effective strategic human resource management at various levels (Dainty and Lingard, 2003). The following chapter will investigate the key areas of strategic human resource management and its applications in the construction industry.

4. CHAPTER FOUR – STRATEGIC HUMAN RESOURCE MANAGEMENT THEORY

4.1 Introduction

An organisation is not able to function or even exist without people. Individuals are the essential ingredient of all organisations. People are most important and a solid platform for any organisation. They provide the means that drives and implements the work for a business. An organisation's strategies and related processes, its effectiveness in achieving its goals and objectives, its success and integrity, reputation and even continued existence all depend on people. Indeed, people establish, lead and manage an entire organisation towards achieving goals.

Mullins (1999, cited in Loosemore *et al.*, 2003: 1) defined people in an organisation as follows: "Individuals who bring their own perspectives, values and attributes to organisational life, and, when managed effectively, these human traits can bring considerable benefits to organisations." Effective management, the most valuable asset of an organisation, is a key factor of a successful business. During the last four decades, people management and organisational behaviour theories have led to the emergence of different schools of thought; for instance, personnel management, industrial relations, human resource management (HRM) and, more recently, a strategic application of HRM (Loosemore *et al.*, 2003). During the early 1980s, organisations realised that people needed proper management at organisation strategic level, which contributed to the emergence of human resource management. Prior to this, from the late 1970s, the dominant model in people management was personnel-management. Its application was focusing on employment job grades and contracts in terms of administration, procedures and control (Redman and Wilkinson, 2001). In the current dynamic business environment and associated complexity and difficulties, HRM and strategic human resource management (SHRM) in modern organisations are more complex applications than personnel-management.

In this chapter the differences between HRM and SHRM will be illustrated including their aims. Following this, the implementation of strategic HRM within the construction industry will be investigated.

4.2 Human Resource Management

There is considerable debate concerning the change that occurred in managing human-related activities, particularly, personnel-management and human resource management.

Researchers are interested in whether this change has an effect on the way that organisations manage and deal with their people. Some management researchers and specialists argue that there is no difference between them, while others highlight the meaning of each term in practice and distinguish between both concepts (Armstrong, 2006). The focus of personnel-management is the workforce and directed at personnel needs, whereas HRM focuses on resource and is directed at the needs of managing human resource. Accordingly, managing human resource is a coherent approach to management and is a perspective on personnel-management but not one of substance (Hendry and Pettigrew, 1990). In this context, Loosemore *et al.* (2003) mentioned that the line management of HR has responsibility for people-related issues, so HR can develop the management team.

HRM specialises in aligning organisation and employee needs and its activities are at the centre of organisational strategy. Furthermore, individuals set an organisation's overall strategies and goals, design organisational structure and work system, provide financial resources, produce services and products and monitor quality. However, Bratton and Gold (2012) stated that people in an organisation have different abilities, attitudes and talents, and these characteristics influence work productivity and quality. Individuals' roles are designed and defined in a manner that aims to maximise their contributions in achieving organisational objectives. Accordingly, people become human resources by virtue of the roles they are assigned to in the organisation.

Thus, there is no difference managing people from managing other resources within an organisation. However, people's nature makes it different as they can be creative. People are a complex resource to deal with; their behaviour is influenced by various factors whether originating in the individual or the surrounding environment (Bratton and Gold, 2012). HRM is part of the entire management process of an organisation, but it deals with the management of people in work organisations. One of its main philosophies is that people are critical to achieving a firm's sustainable competitive advantage. Therefore, management researchers

and HRM specialists emphasise the need to integrate human resource practices with an organisation's corporate strategy, and note the crucial role HRM can play in achieving efficiency and business goals (Armstrong, 2006). Loosemore *et al.* (2003, 33) defined HRM as:

A managerial perspective, with theoretical and prescriptive dimensions, which argues for the need to establish an integrated series of personnel policies consistent with organization strategy, thus ensuring quality of working life, high commitment and performance from employees, and organizational effectiveness and competitive advantage.

4.2.1 Human Resource Management Aims

The management of an organisation's individuals' relationship activities involves an effective and productive use of people in order to achieve strategic objectives and satisfy individual needs. HRM is much more than a set of various coordination activities that is delivered by an organisation's human resources. Indeed, it can make a major contribution to the success of the entire business, as it influences an organisation's key components; its business, individuals, shareholders and project stakeholders. Moreover, it can be the main reason for dissatisfaction and disappointment. Wood (1999) identified four dimensions for HRM to be effective.

- Different practices of HR should complement each other in a coherent way.
- Other systems within an organisation should fit HR practices' coherent sets.
- Organisation's HR system should be in line with an organisation business strategy.
- HR system should fit the environment where an organisation operates.

HRM can be the source of an organisation's various capabilities, which allows it to develop, expand and discover new business opportunities. Armstrong (2006) summarised different areas (organisational effectiveness, human capital, knowledge management, reward management, employee relations and meeting diverse needs) within an organisation where HRM objectives can be achieved.

4.3 Strategic Human Resource Management

In chapter three, strategic management concepts and process framework have been explored and examined. Following this, the theoretical debates of HRM and the nature and significance of the term have been discussed and clarified. In this section the rationale for strategic HRM will be addressed along with exploring the link between business strategy level and HRM.

Over the last few decades, human resource management, one of the different organisation functions, has experienced remarkable developments and changes (Sanz-Valle, 1999). However, many organisations ignore the significance of the HR department as an organisation's strategic partner and view it just as an administrative function. HRM development studies, within various management literatures, called for a more strategic role for HR policies and practices. Realising the critical role that employees and other individuals can play in achieving success and securing sustainable competitive advantage, and the way they are managed in an organisation, was the reason for professionals' increasing interest in HRM. Indeed, the increasing interest in the strategic management of organisations has contributed to raise awareness in various organisational functions of their role in a firm's strategic management process (Wright and McMahan, 1992). It was not until the late 1980s that the field of HRM was integrated into the process of strategic management and led to the development of a new discipline known as strategic human resource management (SHRM).

Becker and Huselid (2006) noted that two concepts distinguish strategic HRM from traditional HRM. The main focus of SHRM is organisational performance, instead of individual performance in HRM. HRM acts as a solution to emergent business problems, while SHRM builds sustainable competitive advantage that contributes to outstanding

organisational performance and differentiates organisational business from other competitors. In this context, Loosemore *et al.* (2003) argued that SHRM focuses on relationships between an organisation's valuable asset, people, and organisational strategy, structures and its external environment. Armstrong (2006) indicated that a firm's ability to accomplish various tasks effectively is considered as strategic HRM, where the focus is on human capital requirements and process capabilities development. He also identified several organisational issues that are included within SHRM scope, which are: structure and culture change, the performance and effectiveness of an organisation, matching a firm's resources to an organisation's future needs, distinctive capabilities development, knowledge management and change management. Armstrong (1991, cited in Loosemore *et al.*, 2003: 37) defined SHRM as:

Is concerned with the development and implementation of people strategies which are integrated with corporate strategies and ensure that the culture, values and structure of the organization and the quality, motivation and commitment of its members contribute fully to the achievement of its goals.

Thus, strategic HRM's fundamental aim is to generate an organisation's strategic capability through ensuring that it has the capacity to achieve success and sustain competitive advantage. This includes individuals who are committed, skilled and well-motivated. Organisations often exist in an unstable and complex environment, thus, the role of SHRM is to provide a sense of direction that can meet the needs of the business, individual and group as well as all employees. Indeed, this is the main objective of SHRM, which can be achieved through design, development and implementation of integrated and practical policies and various programmes (Armstrong, 2006). One of the crucial considerations of effective SHRM is taking into account all organisation stakeholders' interests including owner/shareholders, managers, individuals, various groups, employees, customers and suppliers. Therefore, a proper balance between the soft and hard philosophy of HRM is essential. As explained in Section 4.2.2, the former places emphasis on various aspects of human relations associated with people management. These concern people's continuous improvement and development, working life quality and balance, involvement, commitment,

trust, communication and security of work. In comparison, the later philosophy emphasises investing in an organisation's human resources along with new technology which integrate with business strategy.

4.3.1 HRM and Business-Level Strategy

Human resource forms the most vital asset within an organisation. Therefore, paying great attention and utilising such administrative function to the optimum level secures better results. An organisation, in a specific environment, that learns how to manage its human resources effectively and efficiently, would have greater advantages over others. An appropriate implementation of HR practices, policies and strategies is required to realise business results and achieve organisational goals (Kumari *et al.*, 2011). Therefore, Liao and Chuang (2004) suggested that organisations should think strategically regarding HRM-related matters rather than focusing on its practices in isolation. Various management researchers (for example, Armstrong, 2006; Delery and Doty, 1996; Huang, 2001; Huselid, 1995) have supported this idea and provided evidence with regard to organisations that integrate their HR practices with business strategy and, eventually, achieve better performance and business results.

Mintzberg *et al.* (2009) stated that on different levels – corporate, business and operational – of organisational strategy each level strategically frames the environment of the following level in the organisation as shown in Figure 4.1. On the operational level, HRM strategy is utilised to attain business strategy goals. Due to the nature of this relation, HRM strategy is related to business strategy. In this direction, researchers and practitioners make notable efforts to identify and develop proper HR strategies that provide a link between HRM practices and business strategy (Sibson, 1992; Storey, 1994). However, Purcell and Ahlstrand (1994), in their study of HRM within multidivisional organisations, argued that decisions made on all three organisational hierarchical levels as well as managers' management ability and leadership practices under specific environmental conditions determine HRM strategies, policies and practices.

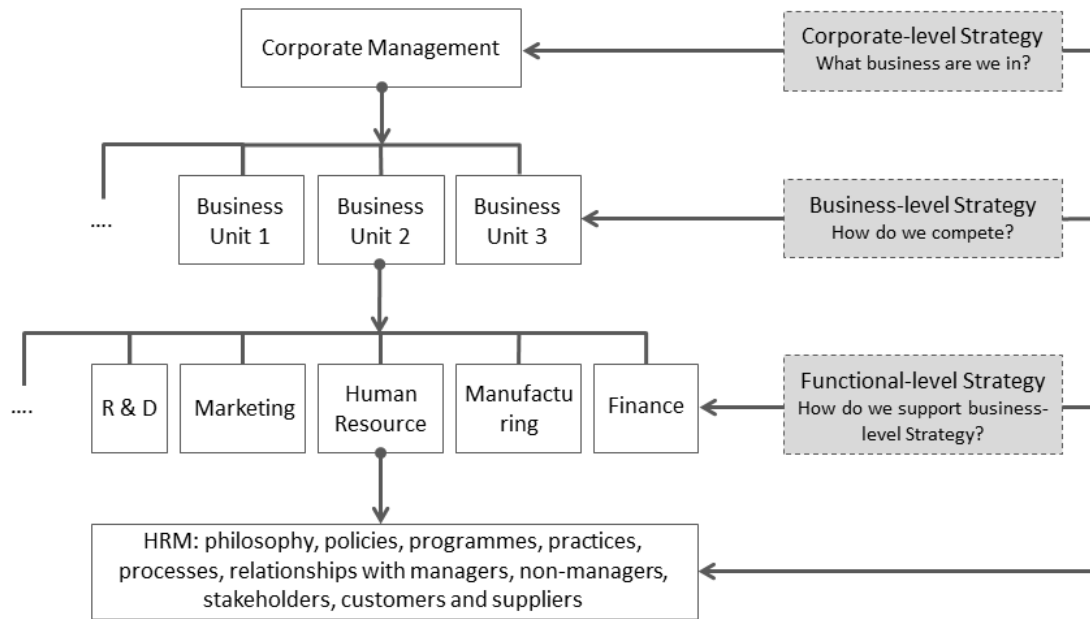


Figure 4.1: Hierarchy of Strategic Decision-Making (Bratton and Gold, 2012: 44)

Hence, according to Loosemore *et al.* (2003), various models have appeared in management literature, which try to capture different ways of aligning an organisation's HRM practices with its various strategic objectives. Indeed, there is no generally accepted model of HRM, which defines its role, activities and policies within organisations. Moreover, there is no obvious agreement with regard to the operational aspects of SHRM function within organisations. However, several models of SHRM function appeared throughout the 1990s, such as Harvard, Michigan and Warwick. Each school of thought has its focus. The Harvard model, as explained by Huczynski and Buchanan (2001), concerns how different policies of SHRM influence various organisational functions and situational factors. Stakeholder interests are its main driver. Stakeholders include shareholders, senior managers, various teams, customers, suppliers and external pressure groups. The Harvard school of thought illustrates the link between the different decisions of SHRM, a firm's business environment and performance. In comparison, the Michigan model focuses on maximising efficacy and minimising cost by treating people like any other organisation resource, in order to reach its goal. Functional aspects of SHRM, such as acquiring, evaluation, reward system and development, should be operated in an interactive way. Furthermore, SHRM practices must support an organisation's strategic direction by aligning functional aspects with a firm's strategy (Fombrun *et al.*, 1984). Hendry and Pettigrew (1990) mentioned that the Warwick model is associated with the analysis of an organisation's external factors and how they

impact internal operations. It recognises the SHRM framework in which it operates, including the entire components, tasks and skills, which define HRM as a strategic function.

The SHRM model best fits managing organisations' functions in the current business environment. Its HR strategy must be supported and aligned with an organisation's business strategy in order to function effectively (Loosemore *et al.*, 2003).

In order to develop the SHRM plan several steps should be followed. Loosemore *et al.* (2003) suggested that an organisation should clarify its short-, medium- and long-term direction. Then, its different policies need to be designed to achieve the various goals. Following this, an analysis of a firm's strength, weaknesses, opportunities and threats can take place. However, during these phases several SHRM principles must be satisfied in order for organisations to ensure HRM policy makes a strategic impact in achieving business goals. Anthony *et al.* (1996, cited in Loosemore *et al.*, 2003) have identified six characteristics of SHRM (see Appendix F).

Once all the steps of the SHRM plan have been completed and associated criteria satisfied, the organisation can identify its opportunities and determine where changes need to be made, which maintains its production effectiveness within a competitive environment. Accordingly, the ability to change and being flexible in response to the various demands of an external and internal environment is crucial for organisations in all industries. Changes associated with HRM strategies aim to support the achievement of an organisation's business goals. These changes are linked to an organisation's management style and various activities at all hierarchical levels. Armstrong (1991) and Armstrong (2006) identified the different areas where various HRM strategies can be implemented.

- Organisational Culture Change
- Organisational Design
- Organisational Effectiveness
- Resourcing
- Performance Management

- Reward Management
- Motivation
- Commitment
- Employee Relations

4.4 SHRM in Research Context – The Construction Industry

During the last two decades development in technology, project management process and production/service management techniques have received great attention and offered the construction industry remarkable advantages. Despite all these recent advances, the construction sector remains one of the industrial sectors which rely most on people and the large majority of construction projects' costs represented by human resources activities (Loosemore *et al.*, 2003). Most construction projects deal with an extremely diverse range of individuals who have a wide range of skills, occupational culture, capabilities, construction awareness and background. This includes people in various positions, administrative, professional, managerial and unskilled, as well as several project stakeholders. Thus, in construction business, a wide variety of employees and different groups communicate and operate in workplace locations to accomplish the specific objectives of a project. It is the nature of structure and mechanism of construction business that many disparate bodies come together and work towards shared project objectives. However, commitment issues and competing demands might emerge as personal objectives are not necessarily compatible or even align with a project's main goals and objectives. Indeed, these characteristics make managing people effectively towards organisational success one of the most challenging activities of construction. Such challenges and the dynamic nature of construction project culture have the potential to undermine the effective application of HRM function, which is applied successfully in more stable industries.

Various approaches and techniques in management literature have evolved to ensure effective application of management and development activities that align with organisational strategies. Brandenburg *et al.* (2006) suggested that a proper strategic human resource management is associated with an organisation's performance, which has been widely investigated and studied within human resource literature. They noted that extensive studies

have very few applications related to the construction industry. However, some construction researchers (for example, Brandenburg *et al.*, 2006; Chan, 2004; Loosemore *et al.*, 2003; Tabassi and Bakar, 2009; Raiden and Dainty, 2006; Yankov and Kleiner, 2001) realised the vital role that people management and human-related factors can play in the successful completion of projects and overall organisational business success. They also encouraged construction organisations to improve their HRM effectiveness before focusing on the delivery of services/products and cost efficiency, as people involvement is crucial from project inception to completion stage.

In spite of the availability of all managerial tools, techniques and applications, construction managers face difficulties and complexities in managing employees and diverse groups of people. Construction business activities are diverse, project issues differ from one project to another due to various project sizes and there are different forms of project structure and participants' relationships. However, Loosemore *et al.* (2003) argued that regardless of all the differences between construction project types, all projects share several characteristics which must be understood in order to integrate them effectively with various strategies, and where an organisation's success is key in managing competition and challenging demands and balancing project requirements, including expectations, needs and priorities, groups and individuals.

Projects are Unique

Construction projects have a one-off nature, where unique organisations with different specialisms come together and are designed and constructed in a particular way to meet a client's specific service/product needs. In this context, Loosemore *et al.* (2003) encouraged project managers to analyse effectively specific experiences, otherwise learning-curve problems might appear and lead to significant risks within a project working environment as a result of new business activities and workplace dynamics relationships.

Short Notice Award

In construction, the business planning period is often limited. This is due to the fact many construction projects and associated activities are awarded after a process of competitive

tendering. Once a project is awarded, most project stakeholders, whether design consultancy, project management team or contractor, have to form a project team including people who have appropriate abilities and skills to accomplish the project on time. Hillebrandt (2000) emphasised that in a construction multi-project environment, people selection function and resourcing process needs to be flexible and respond quickly to changing demands and constantly changing requirements over project development phases.

Workforce Reliance

The use of prefabricated elements and off/on-site fabrications has increased significantly in construction business, even though a transient workforce assembles and completes the final product on a project site location, which contributes to high expense for workers when traveling to work and extra working days associated with completing the project on time (Loosemore *et al.*, 2003). According to Gould and Joyce (2009), project team composition is of a transient nature; teams often change during various project phases which involve various individuals and employees who belong to different organisations and have different backgrounds, attitudes, behaviours and work locations. Such a nature may contribute to various issues including project delay and additional cost.

High Construction Demands

During the last decade construction clients' expectations have increased steadily, in terms of quality of both service and product (Loosemore *et al.*, 2003). Therefore, the construction industry requires a considerable commitment from people working within its business. People tend to work longer hours, involve themselves in risky working practices and experience a high level of stress.

Male-dominant Culture

Loosemore *et al.* (2003) pointed out that male workers are dominant in construction. Several studies (for example, Agapiou, 2002; Dainty *et al.*, 2000; Worrall *et al.*, 2010) reported that this characteristic applies to almost every level of the construction sector from operational level, where site workers and other individuals operate on professional and managerial levels. Therefore, most of construction recruiting process focuses on male individuals which may

lead to skills shortages challenge. It might undermine ordinary working values, leading to less workforce diversity and difficulties associated with the management of equal opportunities and providing individuals with an environment where they can fully utilise their various skills and competencies.

4.5 Summary

This chapter has identified different management theories related to the key driver of strategies within the construction industry: namely, people from the perspective of human resource management practice. The process of realising a strategic direction of human resource management has been uniquely considered in order to effectively integrate it with the development process of a unique theoretical framework within the context of this study. This was achieved by investigating different dimensions of strategic human resource management (SHRM) to those studied elsewhere where its conceptual understanding can be effectively applied, along with identifying the various areas that human resource management (HRM) strategies can be implemented.

Over the last few decades, human resources and strategic human resources have been extensively investigated by management, HR specialists and researchers. This was the result of realising the link between strategic applications of HRM and firm performance. Through practicing appropriate models and philosophies of SHRM, a high level of consistency within an organisation can be developed between its objectives and individuals' needs. Creating an effective working environment based on a strong culture and clear structure as well as people who understand their organisation's strategies, including their roles and relationships plan, allows an organisation to achieve success and sustain competitive advantages. Providing acceptable compensation methods and motivational and commitment factors, along with required training and development activities, is crucial to support organisations which aim to have business strategies and improve individuals, team and, ultimately, organisational performance.

HR practices are important to the construction industry as to all other sectors. However, inadequate attention has paid to SHRM and effective people management programmes are

limited. Nevertheless, the sector is one of the most people-intensive (Loosemore *et al.*, 2003). The final construction service or product is assembled at its point of use, which is the project site location. This, therefore, requires construction organisations to form a transitory organisational structure which is often some distance from an organisation's central management. The nature of construction project cycle requires a project team to be changed over several project stages. Hence, the emergent nature of HRM in construction is more dominant than deliberate or strategic process. Indeed, the additional cost of HR function and short-term contract of participants lead to poor commitment to SHRM in construction organisations. In the HR development industry, there are numerous strategies and applications available for organisations to be adopted (Bratton and Gold, 2012). Construction business needs to implement structured management strategy within its projects rather than rely on emergent strategies for its workforce, in order to manage effectively its people and various stakeholders from various organisations with different knowledge, skills, competences and backgrounds.

5. CHAPTER FIVE – AIRPORT CONSTRUCTION THEORY

5.1 Introduction

“Ninety percent of aviation is on the ground. Only 10% is in the air” (Dempsey, 2000: 1). One of the most essential parts of the air transport system is the airport. Young and Wells (2011) stated that an airport provides solid platform for passengers and cargo to transfer between modes of transport, surface and air. Airport infrastructure provides aircrafts with their entire functional needs, so they can take-off and land. However, the aviation industry comprises complex industrial enterprises represented by numerous airports and various systems, regulations, rules, workers, facilities, users and customers. As with a city, a huge range of facilities and services integrate to fulfil the critical role of an airport and form the aviation industry. Doganis (1998) suggested three distinct groups of airport services – namely, essential operational services, traffic-handling services and commercial activities – where basic infrastructure facilities range from ground and airport transport interchanges and passenger terminals, to gates, aprons, taxiways and runways.

The air transport industry has transformed the world economy (Tyler, 2014). Through scheduling over 50,000 routes and 100,000 flights a day, the air transport industry connects 3.3 billion passengers and 52 million tonnes of cargo. The aviation sector is the lifeblood of the global economy, in which it supports over 58 million jobs and \$2.4 trillion in annual economic activity. It creates jobs for farmers who sell flowers in world markets, and facilitates a global supply chain, so that workers in many nations can collaborate in order to build computers, cars and airplanes. Air transport delivers many of the real world goods for trading in virtual shops of internet commerce. The industry’s intangible benefits also create greater values; flying brings people together, families, friends and business colleagues, and gives them the freedom to be almost anywhere in the world in just 24 hours. Indeed, it turns a wonderfully huge planet into a wonderfully small world of numerous opportunities.

Therefore, in the current modern business environment, the importance of an airport has significantly increased. Graham (2008) stated that apart from the crucial role airports play in the aviation industry, they are considered a key strategic partner of the areas they serve; in this respect, airports become significantly integrated within countries’ overall transportation development plans. Countries in their expansion and development programmes seek to ensure that major road and high-speed rail networks are linked to their airports’ hubs. Hence, airports have a remarkable effect on the economy and environment of both developed and

developing countries in terms of economic and environmental growth. The various services and related activities of airports also have a great impact on different key factors of a country's overall development aspects. They also provide considerable work opportunities and are capable of creating greater wealth and enhancing the quality of life of the areas where they are located.

Airport operators' key role is to enable the entire airport system to operate effectively and efficiently by ensuring control and being responsible in terms of strategic directions, services and management (Ashford *et al.*, 1997). However, an airport performance depends considerably on the type of ownership and management structure and degree of autonomy (Graham, 2008). Numerous books, articles and conference papers have appeared over the last two decades dealing with airport management and operational aspects including design and planning activities (for example, Ashford *et al.*, 1997; Dempsey, 2000; Fernandes and Pacheco, 2007; Young and Wells, 2011). Nevertheless, there has been no detailed investigation and coherent initiative to discuss airport construction as a whole within a management conceptual framework. This chapter will first focus on the various facilities of an airport. The administrative aspects of airport management will then be considered before considering types of ownership structures and investigating airport construction environment.

5.2 The Components of an Airport

In cities or regions the infrastructure projects in the aviation industry are some of the largest development projects undertaken (Dempsey, 2000). Such projects are extremely costly and time-consuming. To complete the whole process of building a new airport, refurbishing or expanding activities from definition stage to handover, an airport body may spend hundreds of millions of pounds and take a decade or even more. Ashford *et al.* (1997) argued that an airport is complex and difficult in terms of management, operation and design features. Indeed, it is developed to serve various users, passengers and cargo, aircraft and ground service vehicles. Each of these diverse users needs a specific facility to operate and function within an airport property. Aviation researchers and specialists often divide an airport's components into two main categories: the airside and landside (Adrem *et al.*, 2006; Fernandes and Pacheco, 2007; Young and Wells, 2011). The former deals with aircraft

operations, and the latter concerns passenger operations. No matter the category or size of an airport, the following components are essential to move passengers in an effective way when using air transportation. As shown in Figure 5.1, airport components are planned in a way that ensures a proper flow from one point to another.

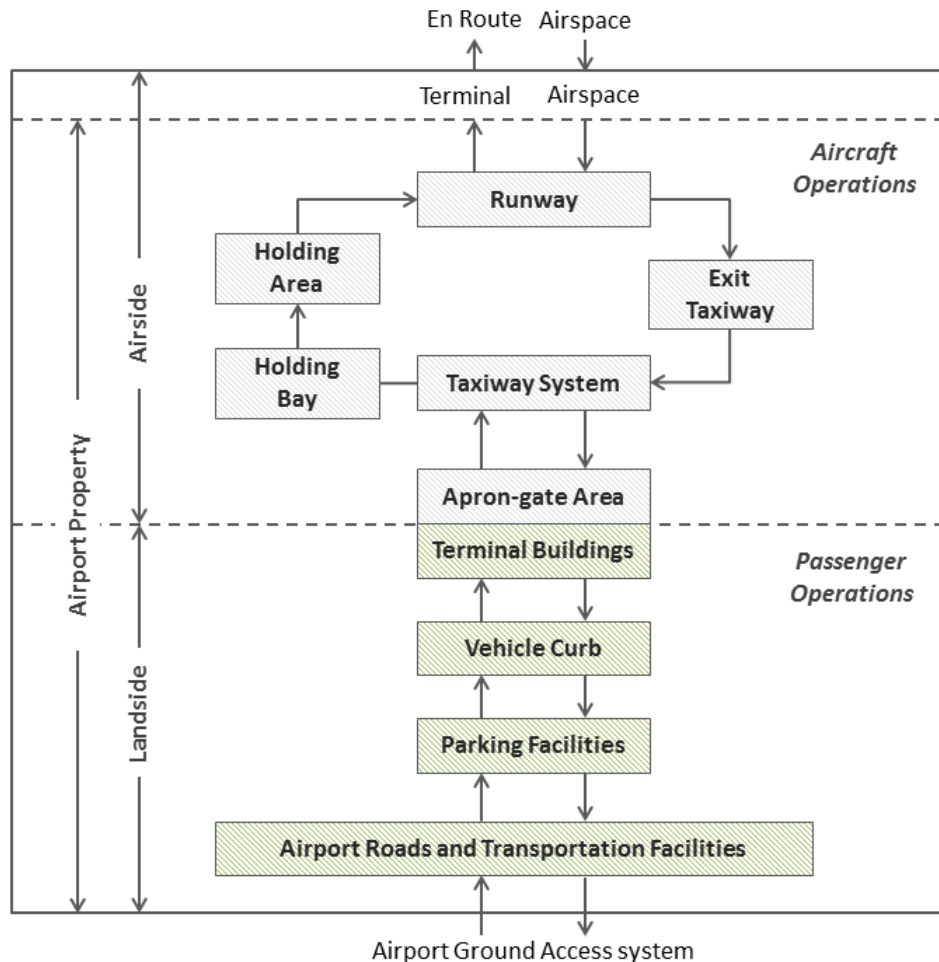


Figure 5.1: The Components of an Airport (Young and Wells, 2011: 103)

5.2.1 The Airside

The airside area of an airport comprises facilities that serve aircraft operations and movement whether around the airport or from the air. It can be further divided into two main parts, the airfield and airspace. The airfield is planned and managed to facilitate the operation of aircraft within an airport's physical boundaries, while airspace represents the off the ground area of an airport, in which aircraft manoeuvre or pass through to another airport. Airfield

facilities include runways, taxiways and apron-gate areas. The aprons are the link point between passengers and aircrafts; aircraft parking areas are where passengers board and disembark and aircraft receive technical-related services, such as luggage, cargo, catering, fueling and any other preparation prior to flight. Other important facilities are located in the airfield, which control and facilitate all aircraft requirements for safe and efficient movement, such as air traffic control and surveillance facilities, fire stations and weather reporting facilities.

5.2.2 The Landside

Passengers, cargo and ground vehicles are served by airport landside components. The airport terminal and ground access are further divisions of the landside, which are planned and managed to accommodate specific users. Terminals are used for passenger and luggage movement from landside to airside where the aircraft is. Ground access serves ground vehicles whether in the surrounding areas or between various buildings within an airport property.

5.3 Airport Organisation and Administration

Activities in the aviation industry need different groups to function. These groups should interact and communicate properly in order to manage overall operational activities and provide essential buildings, installations and equipment that facilitate the movement of passengers, aircraft, cargo and service vehicles. An airport obtains its air navigation regulations and various policies, principles, air transport schedules and techniques from the International Civil Aviation Organisation (ICAO) (Young and Wells, 2011). Many areas of aviation activity are supported by the International Air Transport Association (IATA), the world airlines' trade association, which helps formulate industry policies of critical aviation issues. IATA represents most airlines and provides safety and security for aircraft. It defines a number of crucial airlines standards, introduces various concepts to simplify the air transport business, e.g. bar coded boarding pass and e-ticket system, and reduces the environmental impact (IATA, 2015). Personnel employed by the air transport sector work 24 hours and seven days a week to ensure that each flight is smooth, safe and on time as often as possible. However, there are many other national and regional organisations that work in

precise coordination with different civil aviation authorities and influence the regulations and policies of airports. Their main interest is airport operation; they play a vital role in air transport system and add great value to the area where they serve.

Air traffic services maintain safety and provide air control by navigating aircraft movement, whether in the airport, while taking off, landing, taxiing on the ground and parking or even while flying. Airlines' organisations complete the entire operation process by managing and scheduling flights for passengers and cargo. However, no single operation can perform without the existence of airports. Ashford *et al.* (1997) stated that airports are not similar; they differ in their size and type as well as their relationship with the government of the country where they operate. An airport can be operated as an international, regional or domestic hub. Furthermore, every single airport requires organisation and administration structure to survive in this challenging and dynamic environment.

There is no unique structure of airport management organisation that is applicable for all airports (Young and Wells, 2011). Airport organisational structure varies, from very complex to very simple, depending on the structure of airport ownership and management along with airport scale and category. Aviation professionals and researchers have offered various forms that can be adopted to clarify the relationship formality between managers and their subordinates at various organisational levels. Firm structure supports superiors, employees and other individuals to understand their numerous channels of communication as well as their positions and roles within the organisation in relation to other people. Indeed, the ways in which these functions are organised and managed vary, and each airport has its own form of organisational structure. According to Ashford *et al.* (1997), as in any other governmental and commercial entities within any field where facilities are operated, airport management structure can be divided into two groups, namely, managerial individuals and line functions. The former are those who directly support the administrator in managerial activities and engage in the crucial decision-making process, while the latter are those involved in the day-to-day operations of organisational facilities. The reporting procedures to the airport director also vary considerably between these two groups. However, due to the dynamic nature of the airport environment, decision makers must be continually flexible to update their organisational forms in operation changing conditions.

An integrated relationship between all distinct levels of an airport management system was illustrated by Ashford *et al.* (1997), as shown in Figure 5.2. The policy board at higher managerial level establishes a management pattern and policy, which an airport director/chief executive group follows in directing the airport and making decisions, in terms of goals and objectives setting, resources definition, level of service provided and performance management monitoring. In most airport management systems, the policy board formulates policies only and has no participation in the running of the airport. However, the airport director is often a member of the airport policy board. In turn, day-to-day management of the airport is carried out by several departments under department heads, who report to the chief executive group. As shown in Figure 5.3, Young and Wells (2011) proposed a typical framework for airport management and its organisation structure including major position titles and functional areas.

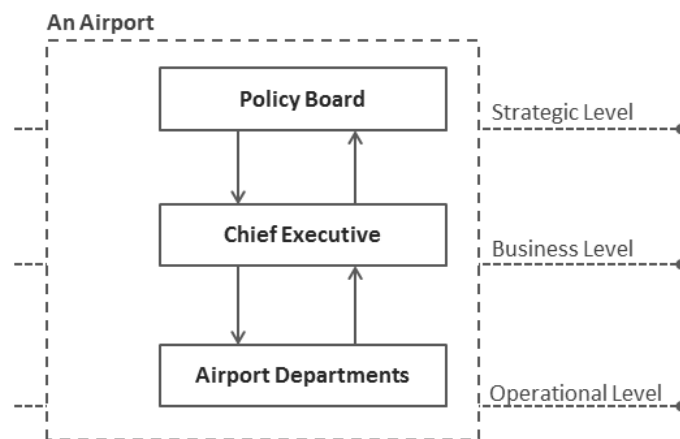


Figure 5.2: Levels of Airport Management System (Ashford *et al.*, 1997: 446)

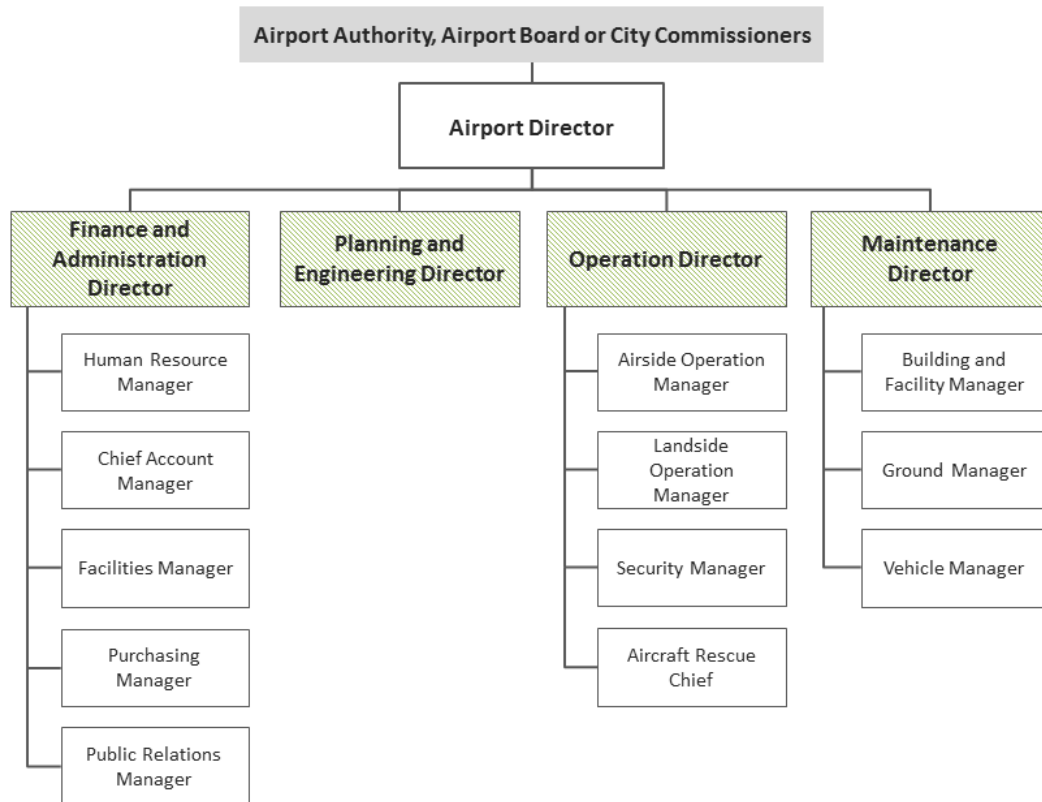


Figure 5.3: Typical Airport Management Structure (Young and Wells, 2011: 35)

5.4 Airport Management

In simple functional terms, Ashford *et al.* (1997) argued that an airport facility is developed to enable aircraft to take off and land. However, between these operations, aircraft crew, passengers and cargo are loaded and unloaded along with supplying aircraft. Moreover, numerous managerial activities take place to support the operational mechanism. The air transport industry and, in particular, its various airport hubs have undergone remarkable changes over the last two decades in terms of infrastructure development and utilised technologies. Nevertheless, Feldman (2007) argued that inadequate attention has been paid to the managerial characteristics of airports, how directors and managers should manage, what their required skills and styles should be and how their performance and success should be measured. Managing an airport, as explained in the previous section, is associated with a wide range of accountabilities from operating the airport on day-to-day basis, directing financial activities, managing huge infrastructure projects and their related maintenance requirements, to dealing with external stakeholders groups. Airport management is a

challenging endeavour aligned with current responsibilities along with providing future vision of the airport. The holding body of a small airport, when dealing with basic operational components, needs a facility that offers essential functions. Ashford and Wright (1992) outlined three distinct features that a simple airport terminal facility should have for minimum operational requirements, these are:

- **Change of mode:** an airport terminal provides a link for vehicle operating characteristics between airside and landside for both air and ground vehicles.
- **Processing:** this includes necessary facilities for all passengers and cargo procedures, e.g. documentation, baggage handling, ticketing and control.
- **Change of movement type:** deals with moving both passengers and cargo to aircraft by transportation facilities including jet bridge, car, bus and train or trucks.

Thus, airport operation does not vary markedly or significantly more complex than the operation of a railway station or regional bus station. However, the operation of a medium or large airport, as well as managing a multi-airport system, is much more challenging, as it requires a competent organisation that is able to deal with complexity and various challenges. Ashford *et al.* (1997) stated that most airports and international hubs of a significant size need a holding body that can provide management capabilities for numerous facilities:

- Ground handling of passengers, cargo and baggage.
- Aircraft services, engineering and maintenance.
- Airline operations including different groups, whether on surface, e.g. ground crew, office and terminal staff, or in the air, e.g. flight attendants and aircrew.
- Business processes and procedures required for the stable economic conditions of an airport.
- Various facilities that support the operation of aviation, e.g. air traffic control, telecommunications, meteorology and aeronautics.
- Different government agencies and functions including immigration, customs, security and various ministries.

A large international airport is very complex. Its operation has all the challenges and problems that any large organisation with a huge number of employees can experience.

However, any failure in operational activities or, in some cases, insufficient practice of operations in such a system, may lead to huge expenses regarding cost associated with aircraft, passengers and cargo delay and additional wages linked to fault and emergency conditions. Young and Wells (2011) emphasised the importance of strategic planning and management, which involve integrated coordination between various systems in an airport. Additionally, thinking strategically in management and operational aspects plays a crucial role in an airport business in meeting its future needs.

Airport management's primary role is to ensure the safe and efficient operation of activities and all related facilities, and to deal effectively with internal and external individuals and groups that utilise various airport facilities. Young and Wells (2011: 379) defined airport planning as:

The employment of an organized strategy for the future management of airport operations, facilities designs, airfield configurations, financial allocations and revenues, environmental impacts and organizational structure.

Young and Wells (2011) expanded their definition and noted that an airport organisation which has major responsibilities of strategic management and planning agenda should focus on various dimensions including, organisational, facilities, financial, economic, environmental and strategic management and planning.

Airport holding organisations responsible for operation, management and planning activities are operated under a variety of organisational arrangements. Regardless of the ownership structure, there are fundamental characteristics, as explained above, of airport administration activities that must be properly considered and efficiently implemented.

5.5 Airport Ownership and Operation Structure

Organisations play a significant role in assessing competitiveness, as they shape firms' oversight, management procedures, overall performance and strategic behaviour. This is also applicable to the airport setting. The aviation industry and airport sector, in particular, have significantly changed and developed over the last few decades. The dimensions of the development vary between countries and even between different airports within the same area. However, one of the dominant areas is structural change in the ownership and management of airports (Graham, 2008). Forsyth *et al.* (2011) noted three drivers of an airport's ownership and management development trend, which are, in fact, the main characteristics of the airport industry. The market of the airport industry operates in either horizontal or vertical structural form. The former is represented by airport competition within the same operational area or between different airports in a global context. The latter refers to flight and airline services linking various airports and air traffic received and provided by those linked airports. Secondly, a range of services are received by customers from airports whether infrastructure facilities, ground handling or commercial services. Following this, the institutional framework, and its related regulations and policies, the services provider of an airport operates. Kapur (1995) stated that the extent of an airport holding entity's involvement in these characteristics and their associated functions affects airport structures in terms of cost and revenue. Accordingly, comparability differences are created between airports. As shown in Figure 5.4, within the diverse services and facilities an airport provides, they can be categorised under several groups.

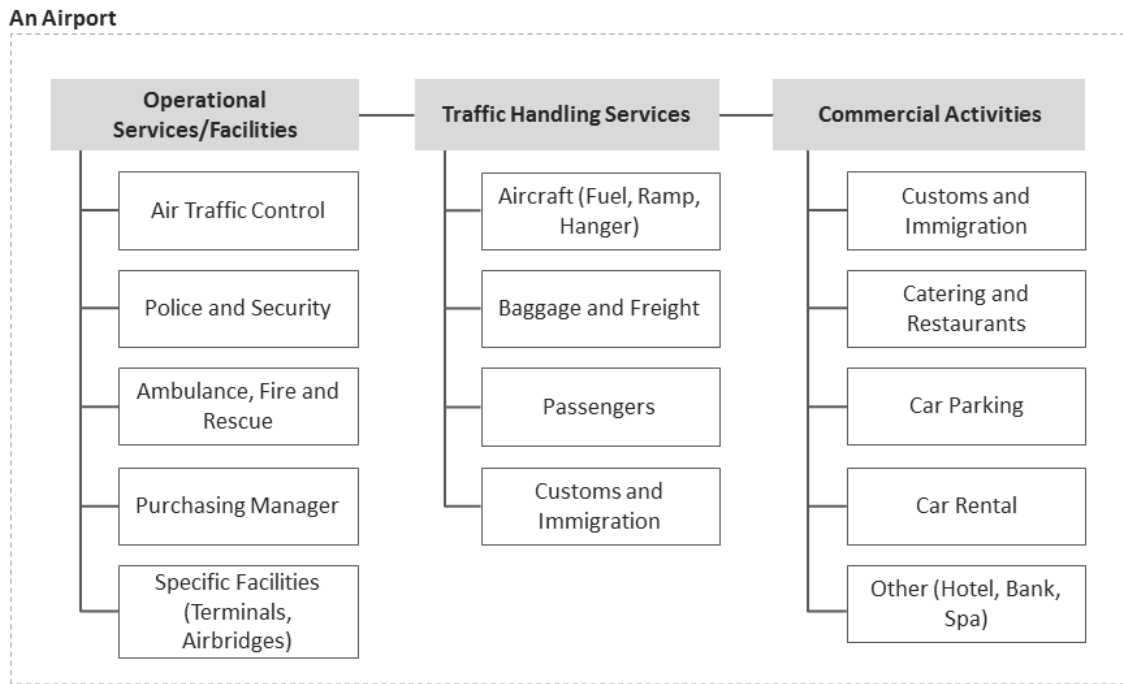


Figure 5.4: Typical Airport Functions (Kapur, 1995: 9)

Due to legal, historical and commercial motives, airport activities in countries and, in most cases, in different airports within the same region vary. However, practically all airports act as a single group to combine the industry's disparate characteristics and related activities towards facilitating the traffic of air transport and the interchange process between surface and air transport. The airport operation and management that governments choose to implement differ significantly and have a major impact on airport autonomy. Graham (2008) mentioned that the common practices of airport functions in many developing countries are directly owned and operated by a government department, which is typically the Ministry of Transport, Civil Aviation Authority (CAA) or state military. In comparison, operational and management functions in many industrialised countries are diffuse. Government departments in these countries tend to separate the many operational activities of their airports. For instance, air traffic control systems, facilities development, police and security procedures, excluding customs and immigration procedures in most airports, are undertaken by private organisations. Traffic handling activities in a number of such countries can be contracted out to private bodies, e.g. airlines, or supplied by an entity of airport administration, while most airport commercial activities are handled by private organisations that specialise in their own business field (Doganis, 1998). In all countries, in some cases, airports might be owned by

government entities but operated by either separate private or public organisations. Indeed, even governments may have interest in local airport ownership in the form of jointly owned arrangements with airport local government (Young and Wells, 2011).

The ownership and management agenda of airports, as in any other infrastructure sectors, is viewed as strategically important in the majority of countries. Indeed, it has experienced two developments. In the early 1970s, the first change occurred when various governments decided to create airport cooperation arrangements under public ownership form. The rationales for this strategic decision were to improve the operational efficiency of airports and to provide opportunities to access private markets. The second change began in the mid-1980s, when a number of countries restructured their major roles in terms of financial plans. Consequently, they instigated a new method of financing airports directly through the private sector in order to improve efficiency (Kapur, 1995). However, structural types of airport ownership and management differ in various countries and often in the same domain. Furthermore, two major forms have been recognised by researchers and industry professionals: public or private ownership. Both arrangements have different forms of structure and operational activities.

Doganis (1998) argued that among the numerous differences between an airport's private and public ownership structures is accessing airport financing sources. In publicly-owned airports, sources of fund are directly from central or local government and might be through lending organisations. Private capital markets can also provide airport funding in the case of public corporations-owned airports under government guarantee form. On the other hand, economic crises, management inefficiency and changes in technology, which have increased competition factors between different airports' holding bodies, have driven government departments to privatisation approaches. Accordingly, a range of options have emerged around the world to divest and privatise a country's entire airport system, single airport, practices of management, functions of airside, or activities of landside. These techniques can be achieved through changes in entity structure whether in the capital, management or ownership context. Graham (2008) argued that the development of the airport sector has moved into a new era of ownership and management characteristics, in which the private sector and international players are beginning to dominate airport control practices.

However, while the forms of ownership and management differ widely between countries, for comparative reasons, Kapur (1995) classified several broad categories of airport ownership, as illustrated in Figure 5.5.

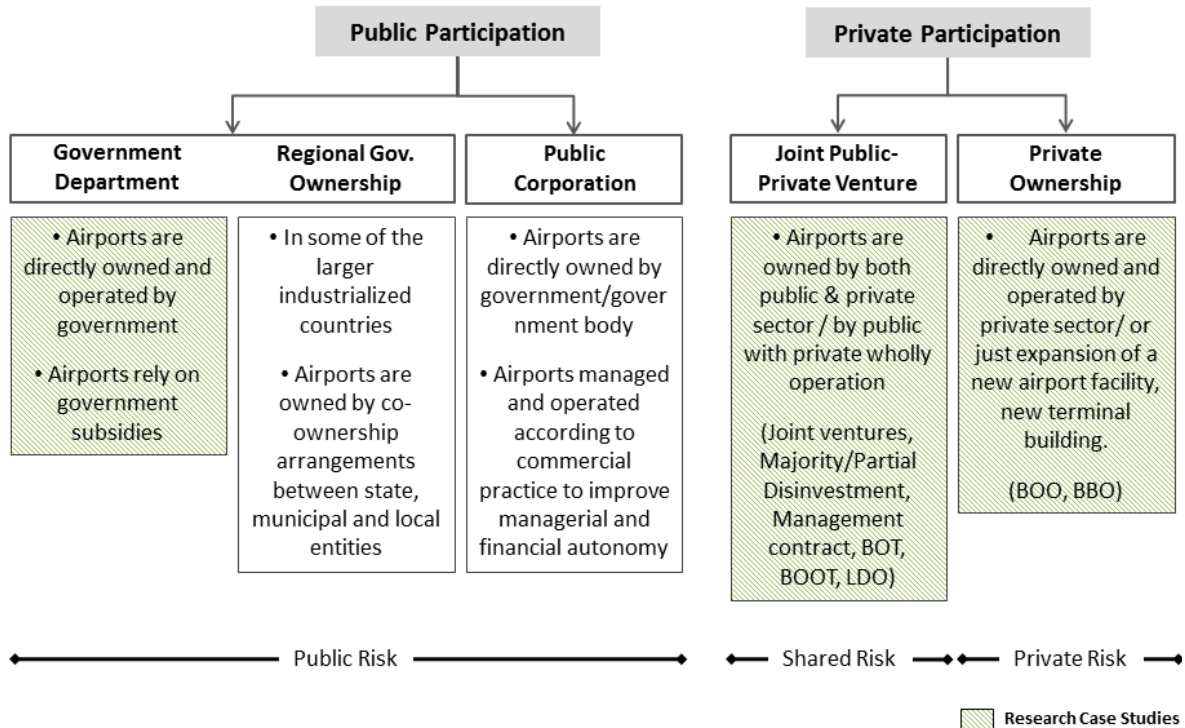


Figure 5.5: Airport Ownership Structures (Kapur, 1995)

5.5.1 Public Ownership and Operations

This model has been utilised to operate airports in the international arena. The general orientation of this method is to focus on airport primary function with a limited degree of association with commercial interest. The majority of airports, until the early 1990s, were traditionally owned and operated by public sector, particularly, central government (Doganis, 1998; Graham, 2008; Kapur, 1995). In many countries, airport operation is under a single government department represented by the civil aviation sector or administration of airport body. The entire airport responsibility is that of either the Ministry of Transport or, in some cases, the Ministry of Defence. Rationales for changes to this form of ownership and operational activities, in a number of countries, are mainly in response to airport efficiency and investment needs in terms of operational and management activities and airport infrastructure. Most of these airports rely on government support in covering operational

expenses, but a lack of consistency, between an airport's aviation policy and efficient utilisation of airport assets, has often been observed. Governments-run airports also do not satisfy airport safety and environmental standards. However, a few airports under public form of ownership are considerably profitable and efficient (Kapur, 1995). These airports are owned by government agencies, but with active consultancy and supervision participation of airlines companies and other organisations from the private sector. Moreover, most airport activities are subcontracted to private entities. In such cases, the typical operational works of governments are completed through cooperation arrangements with several departments. The aviation consulting board is responsible for providing required air transport policies. The operations committee, which is composed of senior airlines and civil aviation members, advises the government on operational issues. The facilities committee is directed by various internal and external bodies, airport director/executive group, airlines senior staff, air services and other members who deal with passenger- and cargo-related functions. Doganis (1998) noted that some governments who retain ownership believe that operational and management practices could be improved if an airport has a high level of autonomy.

5.5.2 Regional Ownership and Operations

This type of ownership, an alternative form to government department structure, seeks to encourage the development of the airport region, which is associated with co-ownership participations between several government bodies. Securing long-term agreements with different airline entities committed to providing operational costs and other services is a traditional method in infrastructure development projects. Kapur (1995) clarified the typical structure of this arrangement that involves local, state and community entities. Some large industrialised countries adopt this approach of ownership where the state and the local government-owned regional airports are directly operated by their government owner. According to Graham (2008), the management structure of regional ownership is complex and varied. Management responsibility can be shared between central government and individual states or just one of them is responsible for handling management issues. Indeed, some airports are contracted to be managed by the private sector on behalf of the government owner. Many authorities are responsible for operating and managing more than one airport in their specific region.

5.5.3 Public Ownership and Operations with Commercial Orientation

This model is also acknowledged as a public corporation. In order to provide access to private capital markets, improve an airport's financial autonomy and its managerial efficiency without affecting the structure of publicly-owned airports, public corporation ownership form was established (Kapur, 1995). Airports under this type of arrangement are run according to commercial practices and agreed performance objectives and various targets. A corporate plan is developed by the airport board of directors, which consists of members from diverse specialist areas, businesses, political and academic backgrounds, reporting to civil aviation department and the Ministry of Transport. Following the determination of an airport corporate plan, a framework of accountabilities, under which they operate, is established. Accordingly, many government companies, with autonomous characteristics, have emerged, but under the instruction and guidance of the Department of Transport and civil aviation. These organisations have introduced some participation of private firms that facilitate infrastructure development in terms of finance and construction activities.

5.5.4 Public Ownership and Private Operations

Inefficient management practices and advances in technology aligned with airport operational activities have increased government willingness to extend airport operational functions beyond the primary dimensions. This required significant innovative change in both financing and operational structure (Kapur, 1995). Gillen (2010) stated that privatisation arrangements in both airport infrastructure and services are capable of overcoming difficulties facing governments in coping with operational functions and development. A government department can achieve this by allowing a private sector to participate in airport operational activities, through joint venture arrangements. Alternatively, it signs a long-term lease contract with the private sector that gives them exclusive control of the entire airport and related benefits, after which the government takes control of the improved asset. Thus, within this structure various researchers and specialists (Carney and Mew, 2003; Graham, 2008; Kapur, 1995) explained various models of joint public-private venture that have been implemented in a number of countries. The selection process of the most appropriate type of joint venture requires time and involves complex decision-making procedures which will ultimately depend on the country and its airport authority's objectives in proposing privatisation.

- **Joint Ventures:** the ownership split between the public and private sectors according to participants' agreed shareholdings. The government often owns most of the shareholdings with limited financial and managerial autonomy. The joint venture includes the development of airport infrastructure and airport operation and administration activities.
- **Share Flotation:** governments have used this method to secure future expansion and development of their airports through private equity funding on their capital.
- **Management Contracts:** in this model airport ownership remains with the government authority which has the flexibility to contract the management and/or operation of all the airport or part of it, for a defined period of time, to a specialised operator under agreed and particular conditions. An operator can be responsible for directing airport performance, economic status, infrastructure development and maintenance related activities. Therefore, management contracts vary and depend on the agreed services managed, operation autonomy level and financial incentives. The concession agreements of airport commercial activities are commonly used by the airport operator through different forms of subcontract arrangements. Management contracts mechanism can also be applied through joint venture method if an airport authority has decided to privatise its airport operation.
- **Build-Operate-Transfer (BOT):** BOTs arrangements are broadly used by governments and private entities for infrastructure development projects. As in other infrastructure sectors, governments can increase the efficiency of their airport facilities and reduce the requirement of capital financing through private sector investments in various airport infrastructures, e.g. terminals, runways, taxiways or transportation facilities. However, a BOT scheme is adopted when an airport specific facility is contracted by a government to a private firm in order to finance, build and operate it for a given period of time, commonly between 20 and 30 years, and to obtain revenue from the facility operation's activities. Under a typical type of concession, all commercial risk is held by the private sector until the government regains ownership of the improved asset at the end of the concession period.
- **Build-Own-Operate-Transfer (BOOT):** this model of joint public-private sector is similar to the previous BOT scheme. However, during the concession period of BOOT contract the private organisation officially takes the property title of the specific facility. Governments and private sectors form this type of agreement when

loan scheme requires guarantees.

- **Lease-Develop-Operate (LDO):** the governing body of the airport authority develops a long-term concession agreement with a private firm. Accordingly, the private organisation is responsible for developing and expanding the existing facility. Over the concession period the private firm receives lease payment on the airport assets from the government which holds all the property rights of the facility.

5.5.5 Private Ownership and Operations

Full privatisation of airport ownership and operations provides various benefits to governments in terms of economic related matters and management and operation efficiency. Graham (2008) stated that a government's decision regarding transferring the ownership and management of its airport to the private sector reduces the need for investment on revenue-earning activities, provides numerous opportunities to access the international commercial markets and increases an organisation's opportunity to diversify as government interface and control activities are reduced. Therefore, the efficiency of management and operational practices may be improved, which provides a greater competition environment and broader share of airport ownership. The effect of privatisation will be on management and employees, as there will be greater incentive to perform well. However, in the literature on airport privatisation there is a great deal of debate. The privatisation of publicly-owned airports may lead to private monopoly, which delivers inadequate standards of management and operational services, poor investment practices regarding the environment and social consideration and less satisfactory employment conditions (Beesley, 1997; Graham, 2008; Jackson and Price, 1994). It is argued that the greatest success resulting from privatisation appears where airport organisational framework is well organised and developed, and the risk of political factors is mitigated or somewhat reduced (Hooper, 2002).

Kapur (1959) highlighted two implementation methods for full private ownership arrangements. Governments' first option is divestiture of the existing assets of an airport, whether in full or partial form. The second mechanism is related to developing or expanding the new facilities of an airport under full private ownership structure, e.g. new passenger or cargo terminal. The BOOT scheme is similar to the frequently used mechanism of private ownership arrangement, but the ownership will not revert to the government at the end of the

concession period. Instead, it is an open ended concession which can be achievable through Build-Own-Operate (BOO) scheme, whereby at the end of the operation period the airport facility will be the property of the private firm. It can also be accomplished through Buy-Build-Operate (BBO) scheme; a private firm purchases an airport facility through agreement with the government, and following development or expansion process the property title is granted to the private firm.

5.6 Characteristics of Airport Construction

The previous sections described various characteristics of the air transport industry and its operational system and management structure, which integrate to provide a solid platform of services for airlines and other airport customers. Hence, it is very important to differentiate between providing airport services and producing an airport's various facilities that support distinct services. Airport facilities are the tangible objects that customers can physically examine, and which also require effective and efficient managerial and control practices to be integrated in the overall airport system. Binnekade *et al.* (2009) suggested that airports are becoming a multimodal transportation hub link with large numbers of buildings within substantial areas that constantly require refurbishment and/or expansion in order to meet the community needs, growth and changing needs of the industry. Construction projects in an airport environment, therefore, represent a fundamental part of its operations. Indeed, numerous studies recently have dealt with various aspects of managing airport operation. However, despite this theoretical basis, there is a lack of studies that examine the management of airport construction projects and their related issues. Researchers and practitioners in case studies and annual reports have illustrated the reasons for the challenges that face operators in managing and controlling construction projects (Airport Authority Hong Kong, 2012; Ashford *et al.*, 1997; Banks *et al.*, 2012; Binnekade *et al.*, 2009; Adrem *et al.*, 2006; Khalafallah and El-Rayes, 2008).

Ashford *et al.* (1997) argued that airport projects are very similar to various projects in some other businesses in terms of the following characteristics:

- Airports business requires significant amounts of investment.
- Airports maintenance involves continuous and expensive procedures.

- Airport finance requires careful methods of control, although many airports are not associated with profitability in terms of commercial activities.
- Airport operational activities require long-term planning competence in order to ensure efficient response to future demands and changes in working practices and technology.

However, as shown in Figure 5.6, a comprehensive review of related literature revealed the unique characteristics of an airport construction environment. As a result, the researcher was able to underline its various challenges and complex factors.

Airport Construction

Airside Safety Rules And Regulations	Many Stakeholders	High Level of Details
Security Elements Personnel badges, license for vehicle on airside, certified drivers, security check points often distance from site by the specific country's security agency	Airport Different Activities and Functions Several key functions need to be considered by several stakeholders which lead to many construction requirements	High Complex Projects Clients are tempted to set-up design and specification before engaging a contractor. The client assumes the risk And not take advantage of the contractor's technical know-how and experience
Insurance Policies Potential damage, flammable fuel	Function Examples: Terminal Coordination Optimize the expected passenger flow Commercial Maximize commercial sales Traffic Coordination Maximize flexibility to allow different aircraft sizes and types for travelers Customs and Security Design Separate flows (no visa), flexibility Ministries Max. passenger experience, quality and comfort Stations, accessibility	Prepared for Big events Time Extremely Crucial World Cup, Olympic Game, Paralympics Games, Pilgrimage
Airport Regulations Must be followed by various stakeholders involved on airside activities		High Level of Impact Economic Trade, Tourism Development Transportation, Infrastructure
Commercial Factors Airports often 24/7, major operations in low traffic period		
Expansion Projects Common, new materials conform with existing one. Identifying installation connection points		

Figure 5.6: Characteristics of Airport Construction

5.6.1 High Level of Impacts

According to Kapur (1995), a basic ingredient of a country's economic growth, development

and production is infrastructure and transportation services. Adequacy, quality, reliability and quantity of infrastructure and transportation in a country are key factors of its ability to survive and compete globally. The level of demand being placed on all forms of transportation has been growing. This is due to rapid human population growth, urbanisation and technological advances. These factors have created various imperatives for countries and, particularly, their services providers and operators. In addressing these imperatives, airports play an increasingly crucial role (Binnekade *et al.*, 2009). Airports are significantly important to a country's economic status and the quality of life of its residents. The importance of airport hubs has been increasing and the size and location of their facilities have become significant factors in increasing a number of distinct businesses. The air transportation sector, in particular, its presence in numerous airports, and its interactions with other sectors, has promoted various industries to expand their business and markets, which eventually benefit the region. Other factors, such as cross border investment, increased communications, international market operations and travel and tourism, have brought more attention to the vital role that airports play. As stated by Graham (2008), the economic effects of airports can be seen as direct and indirect impacts. The primary impact is associated with airport income and employment activities generated from all operational actions and related infrastructure facilities; while the latter is concerned with suppliers' role in the airport industry and the generated income and employment related to the supply chain activities of services and goods.

5.6.2 Safety Rules and Regulations

Security levels in airports are always high, whether in landside, terminal or airside areas. Airport management and others involved in operational activities are required to ensure and provide safety and personal security of different staff and customers using airport facilities. Ashford *et al.* (1997) noted that within an airport's national and international contexts, there is noticeable concern about increasing security level and providing protection against terrorism and possible attacks on civil aviation. In addition, there are unpredictable incidents, e.g. aircraft accidents, as both factors have high potential which could lead to injury, property damage and serious loss of people's lives. The achievement of these mutual goals requires wide cooperation activities and a high level of commitment from a number of organisations, namely, airport administration, airlines, airport staff, airport authorities, police, military and

security services, medical services and various government agencies. However, the majority of airport staff face a number of obstacles when, for instance, entering a terminal or airside. Supplementary security procedures must be applied to deal with personnel involved in construction projects, which would not be the case if working elsewhere. These might include security checks by a specific security agency in the country and badges and licenses for all workers, drivers and vehicles intended to access airport property (Adrem *et al.*, 2006). Insurance policies for airport construction work also differ markedly from those for ordinary construction sites. Contractors, subcontractors, suppliers and others involved in construction activities must be fully aware of safety rules and regulations that are not applicable on landside (Khalafallah and El-Rayes, 2008). More challenges and difficulties are associated with construction work related to expansion and refurbishment projects, which are the most common type of airport construction activity, in terms of the selection of materials and products, e.g. operating and facility systems that must be coherent with the existing area, and working with unique materials and critical standards. Additional to identifying the proper areas of connection points between existing buildings and the new developments, construction design elements must be coherent with the older area, e.g. passengers' circulations and jet bridges. As an airport is typically open 24 hours, seven days a week, and due to commercial considerations, construction works can often only be carried out when traffic and passenger capacity is low, normally, during inconvenient night working hours.

5.6.3 Many Stakeholders

The integrated process associated with airport infrastructure projects involves building airport infrastructure facilities, operating the numerous facilities or leasing different spaces to service operators and ensuring effective collaboration between them to provide air travel customers secure and safe services. The group of stakeholders involved in these activities is large and ambiguous, and also varies according to airport ownership structure. Mitchell *et al.* (1997) defined stakeholders as individuals or any group that can affect the achievement of an organisation's objectives or even be affected by attaining those objectives. However, a review of the literature on airport benchmarks (Ashford *et al.*, 1997; Graham, 2008; Neufville *et al.*, 2003; Upham *et al.*, 2003; Young and Wells, 2011) shows that airport stakeholders can be categorised under numerous groups as in the following:

- **Passengers:** including arriving, departing, transit passengers from international or

domestic hubs.

- **Airlines:** organisations that provide air transportation services for both passengers and cargo.
- **Airport Organisation:** the various groups that form airport organisational structure.
- **Aviation Authorities:** any organisation involved in air transportation activities and provides regulations, rules and other instructions.
- **Investors:** this group is involved in investment activities in the airport, whether at ownership, operation or commercial level.
- **Concessionaires:** firms that provide operational services in an airport terminal, e.g. hotel, food and beverage, retail and car rental services.
- **Service Providers:** these stakeholders provide services to airport and airlines organisations whether in airside or landside areas; For example, an aircraft fuel and oil supply, baggage handling, aircraft loading and unloading activities, aircraft cleaning, aircraft inspection and maintenance, catering transport, passenger handling activities, facilities' inspection and maintenance and ground transportation and parking services.
- **Airport Staff:** this category includes all employees at the airport, who are employed directly by the airport organisation or firms operating in the airport.
- **Government Authorities:** all governments departments associated with airport operational activities are included in this category, e.g. customs, security and various ministries
- **Non-governmental Organisations:** any local or international organisation which has interest in the operation of airports, e.g. environmental, educational, arts and commerce entities.
- **Airport Suppliers:** includes all organisations which deal with the airport itself as the primary customer, e.g. airport equipment suppliers, contractor firms and consultants.
- **Communities:** individuals or groups who are members of the airport and are affected by airport expansion plans and operational activities in terms of safety, security and other environmental impacts, e.g. noise, waste emission, air pollution, traffic congestion and water quality.

Due to the nature of construction, activities associated with airport construction projects

expand the stakeholders' boundaries, within which an airport construction project encompasses typical airport stakeholders, or those who are involved in a specific construction project, and other construction project participants who are associated with the actual construction activities. Thus, airport construction projects have many different stakeholders, all of whom make a significant input during the project life cycle. This is due to the large number of activities associated with aircraft and passenger flows (Flouris and Lock, 2009). Consequently, reaching agreement over various demands and requirements is not a straightforward process. Adrem *et al.* (2006) illustrated how several key stakeholders in an airport construction project can drive various construction requirements based on their functions; for instance, terminal coordination, commercial, traffic coordination, customs/security and design.

5.6.4 Various Activities and Functions

Airports combine different elements and distinct activities within the same operational area, which interact and ultimately form the total activities of an airport (Ashford *et al.*, 1997). These elements and associated activities vary depending on their functions and focus areas within the entire operational process. High level detail is associated with airport operational mechanisms, e.g. terminal coordination, traffic coordination, commercial function, customs, security and design, which leads to various challenges and complexities when designing new facilities. Accordingly, various activities and functions in airports impose the design outline and specification to be established by an airport operator/administrator prior to the involvement of construction practitioners (Adrem *et al.*, 2006). Predetermined and exact specifications may, consequently, reduce designers' and contractors' responsibility levels for design and/or functional quality, and, as a result, some obstacles may arise between airport project administration and assigned design or contractor organisations. The advantages of their knowledge and technical experiences on similar projects could also be limited.

5.6.5 Critical Timeframe

Besides growth and development demands, the reasoning behind many expansion, refurbishment and new airport projects are countries' preparations to host big sporting events, such as the World Cup or Olympic and Paralympic Games (Banks *et al.*, 2012). This also

requires every organisational group at airports to make changes to the way they normally operate in order to meet the needs of various passengers and efficiently deal with the increased operational demands. In such infrastructure development programmes, the timeframe is extremely important; for example, London's temporary Games terminal for the 2012 London Olympics and Brazil's airports preparations programme for the 2014 World Cup and the 2016 Olympic games.

5.7 Project Strategy and its Human-related Factors in Airport Construction

Clients, developers, consultants, designers, prime/sub-contractors, key/sub-suppliers, government/non-government bodies and regulatory agencies are the typical range of stakeholders involved in large construction projects. These projects supported by a management framework rely on skilled labour, and coordination with many professionals, consultants, construction and supplier firms is mandatory. In order to manage, control and execute such mega projects successfully, diverse players must effectively deal with diversity and confront this challenge (Lampel, 2001). The successful achievement of organisational objectives relies on delivering various projects within a scheduled time frame, budget estimate and expected quality. However, it is argued that the traditional drivers of successful project management are no longer adequate for a large scale construction project to guarantee its success and to reach organisational goals and objectives (Shenhar and Dvir, 2007). Instead, the implementation of effective project management and human resource strategies is the most appropriate approach for the current business environment where most projects are complex and uncertain (Price *et al.*, 2003; Sheppeck and Militello, 2000). Indeed, although one of the most labour-intensive sectors is construction, project managers who follow traditional ways of managing and executing construction projects often give inadequate attention to human resource factors in their management agendas or even disregard them completely. Instead, they focus on time, cost, and quality. This behaviour might have a significant impact on different expectations as no project would exist without input from other people.

One of the crucial dimensions of airport organisation focuses on is facilities management and planning agendas. This concerns directing and maintaining different airfield infrastructure

facilities and effectively dealing with related development plans. Construction projects in airports differ significantly from one another in terms of technical factors, participating practitioners, range of stakeholders involved and nature of functions, specifications and requirements associated with each project; for instance, runways, aprons, taxiways, airside lightings, parking facilities, transportation facilities, navigation and communication systems, terminal and related facilities, ground access facilities and other supporting facilities, whether aeronautical, e.g. power plants, fire stations and fuel farms, or commercial projects, such as restaurants, offices, hotels and car rental locations. All projects are also connected in a certain way, as the completion of an airport operation is not possible without them being integrated in order to facilitate primary airport function.

Hence, with the many challenges and difficulties linked to airport construction in producing various facilities that support different services, and all the expectations associated with project outcomes, when an effective and integrated project strategy exists, an effective working environment will result. Therefore, an airport entity that is accountable for construction activities can mitigate the numerous challenges in managing and controlling an airport construction project. This, in fact, depends upon employees at all organisational levels and various project stakeholders facilitating effective lines of coherent communication. The sporadic involvement of these distinct individuals, groups and organisations will change over project lifecycle. Accordingly, as indicated in Figure 5.7, the interplay between project strategy and its human-related factors is often an overlooked factor of success in strategic project management, where managers structure a framework of success, which involves a unique approach to strategic project management practice.

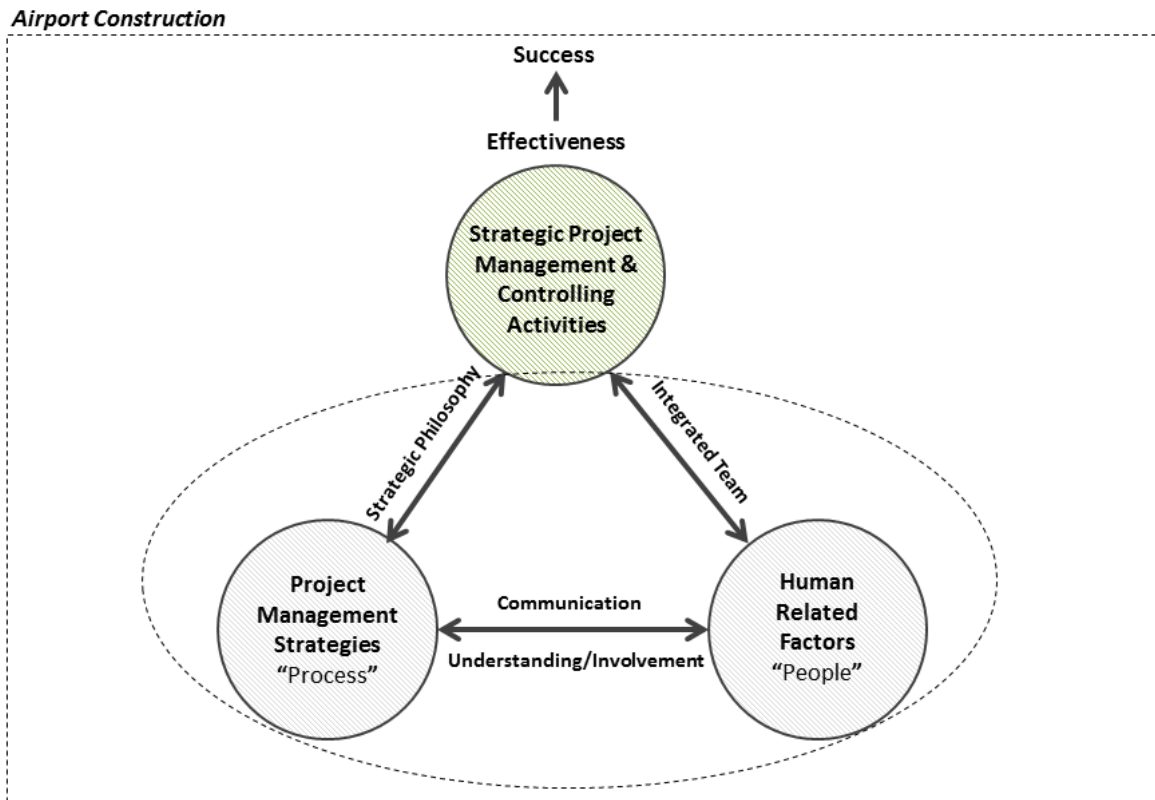


Figure 5.7: The Effectiveness Model of Airport Construction

5.8 Summary

Construction at airports differ, with a range of difficulties associated with working in an environment and managing issues and challenges when dealing with various stakeholders. An airport construction organisation or operator deals with various management processes, tools and techniques as well as various people, groups and stakeholders, who are involved in airport activities and, therefore, contribute to construction works. The process of management, interaction, communication and development requires an application of effective and efficient strategic management and procedures to achieve project success and satisfy organisation business objectives, which relies upon facilities management and planning entity that operates as an autonomous organisation or connected to airport governance.

Structures of ownership and control are varied in the airport industry, whether public or private, and eventually affect the performance and efficiency of various operational and

managerial aspects. Appropriate ownership and control structures might vary within different airports. Accordingly, countries should properly review the governance structure of their various airports and make use of the best practices that can be generated from ownership arrangements in terms of achieving airport operational goals and objectives, facilitating responsibilities, satisfying shareholders' interests and ensuring their rights, enabling power and accountability of the management and enhancing relationship with diverse interested parties. Within this context, researchers have provided empirical evidences of the link between the governance/ownership structure of either an airport organisation or airline operator and the performance and efficiency of several dimensions, such as airport investment, pricing impact on users, economy, environment and society, airport management and operation implications (Backx *et al.*, 2002; Carney and Mew, 2003; Oum *et al.*, 2008; Parker, 1999; Yokomi, 2005). However, there is a lack of evidence on how the various ownership forms improve airport organisations' effectiveness in managing and controlling airport construction projects.

6. CHAPTER SIX – RESEARCH THEORETICAL FRAMEWORK

6.1 Introduction

The review of studies on the construction industry and its project management and controlling practices has provided much evidence of associated complexities and challenges. The industry has experienced significant development and dynamic changes in numerous respects, ranging from systematic, technical, technological, informational, environmental, social, legal and economic, to the project delivery process, fragmentation and dynamism nature and the significant increase in diversity among workers and project stakeholders. Such characteristics have emphasised the need for strategic management knowledge and its related practices to act as a solid foundation for an organisation's strategic plans and systems, as well as clarifying directions and supporting managers. These managers lead, supervise, motivate and mentor others, to manage and accomplish an organisation's activities effectively and efficiently. Consequently, strategic thinking has also been implemented at project level, as a project team must understand the environment and learn how to deal with business aspects in order to support their organisation and strategy, rather than just focusing on meeting traditional goals; time, budget and performance. Therefore, it becomes critical for organisations to have project management staff who are capable of forming, developing and maintaining project and programme strategies as well as defining roles and responsibilities. Furthermore, increasing the diversity of people involved in construction activities and the range of project stakeholders aligned with a single project, has meant that strategic human resource management can play a crucial role in dealing with individuals and groups of various knowledge, skills, competences and background.

Supplementary elements of construction complexity and difficulty are highlighted in the airport literature, which differentiates airport construction projects from those in other areas. Airport business has experienced great difficulty in coping with the growing complexity of construction projects. Baccarini (1996) stated that most practitioners' views with regard to projects' simplicity and complexity are based on the level of management issues associated with each case. This, indeed, has placed more emphasis on the need for efficient strategic management philosophy that ensures effective completion of airport facilities in line with an accepted level of expectations.

Within the current business environment, the air transport industry has been evolving and growing rapidly, which, consequently, has placed significant pressure on overall airport infrastructure and its different functional activities. An effective and efficient approach to mitigate specific problems associated with airport construction projects is therefore needed. The proposed research framework is composed of a set of coherent concepts formed from several components and organised in a manner that makes them interact, in order to improve management practices, processes and activities, and seek to achieve project success and long-term business goals. Each component aims to enhance one or more aspects that impede the progress of project management and cause certain obstacles, which have been identified from a comprehensive review of airport business related literature. It can be further broken down into several sub-modules, which explain the mechanism of applying the main component.

However, before examining closely the theoretical framework components and mechanisms of the research, several managerial initiatives for improving the production of goods and services will be outlined, in terms of system approaches, key principles and methods, which have emerged in order to improve business context and resolve its associated issues.

6.2 Business Management Approaches

Organisations in all industries seek to attain a high level of performance and better results by increasing their effectiveness and efficiency, especially if they are to survive in the current competitive market. Sproull (2009) stated that improvement initiatives are always associated with such organisations, as they continually reinvent themselves and adapt to external factors. These firms always emphasise the need for change as managing change is much easier than reacting to it, and believe that what worked in achieving past success will probably not be appropriate for future objectives. However, the determining factors for future success are an organisation's awareness of what to change, what it should be changed to and how to make certain changes happen. Thus, establishing and implementing a strategic approach for improvement requires several considerations. An organisation should select the right area of focus and its improvement content, develop an integrated plan to execute, receive the required support from the top managerial level and provide an effective environment for collaboration and involvement of those who will, ultimately, deliver the service or produce

the product. All this cannot be done by chance; an organisation must logically address the former questions at its strategic, business and operational levels, in order to develop and implement effective strategies and policies. Organisation management researchers and professionals, therefore, have developed many structured methods, tools and techniques to implement in all industries regarding improvement initiatives and problem-solving processes, to cement an organisation's strategic goals and objectives.

6.3 Continuous Improvement Strategies

Continuous improvement in all industries, particularly in industrial processes, is the central focus of most operations and quality improvement strategies, as it has been considered a significant element of competitiveness and business excellence when dealing with systems, production or providing services (Jabrouni *et al.*, 2011). Ross (2003) highlighted that this concept originated from the Japanese term *Kaizen*, which is composed of two words, *Kai* and *Zen*, meaning 'Change' and 'to improve' or 'For the Better', respectively. Generally, in the current modern business setting, this means continuous improvement. According to Sanchez and Blanco (2014: 988), continuous improvement can be defined as "the continuous process of improvement in the company done with the participation of all staff." They also highlighted its following characteristics:

- By its nature, the process is not an action, instead it is a cycle. Therefore, it must be carried out in a constant manner over time.
- Individuals at various organisation levels, from upper managerial to employer level, should participate in the improvement cycle. And all aspects of a firm's activities and workforce should be considered.
- The major aim of continuous improvement is to improve productivity, effectiveness and safety for a system, structure, service or product. In order to achieve this target, new areas of improvement should be identified and waste should be eliminated.

The reason for the emergence of Kaizen philosophy was to improve Japanese manufacturing processes, which, indeed, led to success in various fields as a result of improved quality and decreasing waste (Ross, 2003). Waste reduction in this context includes eliminating overproduction, reduction of unnecessary activities, acting in a more efficient way and

reducing time wasting. However, the benefits of continuous improvement approach can be realised in many other working environments at both team and organisational level. Sanchez and Blanco (2014) stated that improving the quality of management is not the only motivation in Kaizen activities. Such an approach can be adopted by organisations when they experience changes in their business environment, or identify new management systems. Most firms in all industries have witnessed many changes in their business, ranging from globalisation, advanced technologies, high customer demands and expectations, quality and time becoming a key business concept and increasing social awareness in terms of environmental issues. Additionally, numerous strategic management approaches have emerged and become known to organisations, which require effective strategic planning, decision-making or problem solving processes, such as Plan-Do-Check-Act (PDCA), Six Sigma, Lean Management, 9S, Seven Steps and Hoshin Kanri strategic approach. The appropriate selection of these methods, tools and techniques might involve a combination of different approaches, while the successful implementation process depends on understanding the event context, knowledge level and the proper application in an organisation activity and its processes. However, the following sections will give a brief overview of several approaches and their features.

6.3.1 Plan-Do-Check-Act

This approach is a combination of aspects of management, systems and behaviours. Sokovic *et al.* (2010) argued that PDCA is a cycle, as shown in Figure 6.1, of quality improvement and effective method in both managing a system or programme and its actions, whereby organisations continuously focus on areas that need development and seek better methods of improvement. Temporary and permanent corrective actions are part of the cycle. The former action focuses on the results and aims to tackle and fix issues, while the latter action directs its attention towards investigating and eliminating the root cause of problems, so the improvement process can be sustainable. Lundkvist *et al.* (2014) categorised four phases of the Plan-Do-Check-Act cycle:

- **Plan:** this involves studying the current event in order to identify and analyze the problem, followed by developing a plan for change.
- **Do:** this phase is associated with generating possible solutions and conducting a test for the best potential solutions on a small scale without full implementation.

- **Check:** in this phase the test measurements observe the effect, how effective it was, and analyse and identify how the solution could be improved. The results should be reported to those who have authority and make decisions.
- **Act:** in this step, the results of the solution for full implementation are studied, and the changes that are required to ensure standardisation and improvement of the cycle are identified.

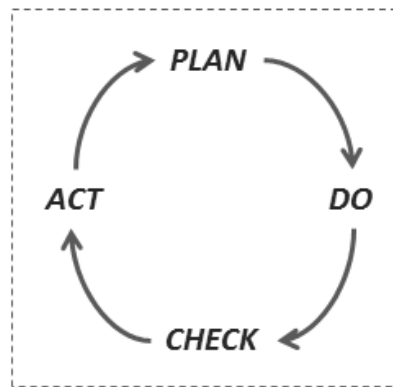


Figure 6.1: Plan-Do-Check-Act Approach (Sokovic *et al.*, 2010)

6.3.2 Six Sigma

Six Sigma is another method of process improvement which falls under the umbrella of total quality. Hutchins (2008) stated that this approach seeks to eliminate all causes of defects, no matter how small they are, in order to improve outputs quality. Accordingly, organisations can implement Six Sigma approach in any type of project by following a defined sequence. Its concept can be utilised as a management system or method for problem solving or planning projects as shown in Figure 6.2. The first acts as a process for creating a new process or product and adopts DMADV scheme: Define, Measure, Analyse, Design and Verify. On the other hand, as a methodology, it improves an existing system or process and follows the DMAIC method: Define, Measure, Analyse, Improve and Control. Both techniques are ineffective measure without a good definition of the process or the targets of the activity, in which firms should have quantified value goals. Sokovic *et al.* (2010) defined the five phases of each data-driven approach towards a Six Sigma project:

DMADV

- **Define:** selecting the right project, identifying and prioritising its goals and activities.
- **Measure:** developing the measurement criteria of the new process and related scope and performances, capabilities and risks.
- **Analyse:** identifying the available alternatives to develop and design.
- **Design:** following the selection phase, a new process or product can be developed and designed.
- **Verify:** the last step is to implement and verify the effectiveness of the final design.

DMAIC

- **Define:** selecting the right project, identifying and prioritising its goals and activities.
- **Measure:** the key characteristics of the current process with the scope of parameters and related performances.
- **Analyse:** investigating and identifying errors and causes.
- **Improve:** the first step is changing the process and then improving its performance.
- **Control:** the last phase is associated with controlling the improved process and sustaining the achievement.

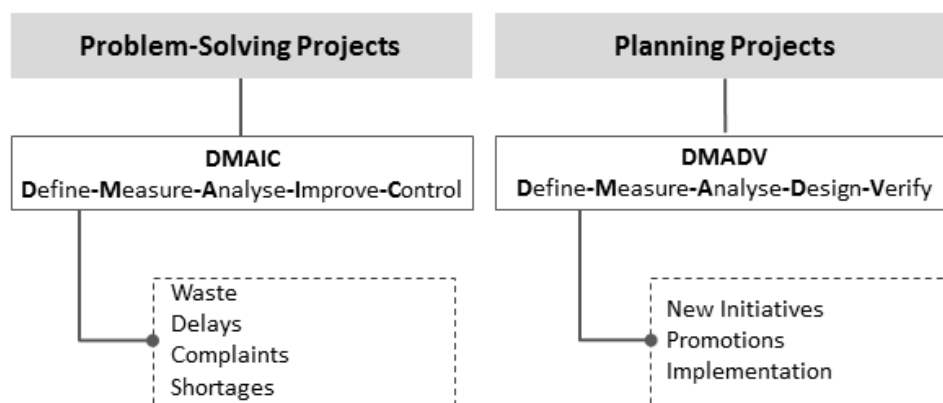


Figure 6.2: The Two Arms of Six Sigma Improvement (Hutchins, 2008: 127)

6.3.3 Lean Management

The core idea of lean philosophy is to maximise client/customer value or any individual who

consumes a service or tangible product, while minimising waste. Its main goal is to implement a perfect value of product or service creation to provide perfect value to the customer. Different aims are associated with lean strategy including flexibility improvement, output improvement and the increased market response efficiency of businesses (Hoshin, 2008). Lean is not a standard approach or cost reduction programme; instead a philosophical way of acting and thinking can be applied by an entire organisation in any type of business or process. The main focus when adopting lean thinking is how to achieve goals and desires, rather than just focusing on end result. Organisations, in various industries, can implement lean management and make significant changes in the way they manage people, processes and products. Accordingly, lean management literature has covered numerous managerial areas, for instance, design, maintenance, supply chain, safety, information technology, human resources and materials (Bonavia, 2011, Cooper, 2004; Elizabeth and Cassandra, 2010; Emmitt, 2011; Hallowell *et al.*, 2009; Hammer, 2011; Flinchbaugh, 2005). Ballard and Howell (2010) stated that the unique approach to achieving goals, in which value is added by reducing everything else, is not the only difference between lean project management and traditional project management practice, but also the structure of project phases and the nature of relationship between each phase and its participants.

Organisations that want to sustain the progress of lean thinking need to focus on its invisible, fundamental components. One of them is the management and leadership structure including the control system. The skills and capability needed at all organisation levels is part of this (Pullin, 2005). According to Balle and Balle (2009), lean management is all about developing a system to make people think, as this leads to better performance, which contributes to better service and product. Projects are run by people who are guided and supported by managers and leaders towards continuously improving the process for creating a product or delivering a service that adds better value to the customer (Womack and Jones, 2003). However, influencing people's behaviours is one of the most difficult challenges facing organisations, while desired outcomes can be totally missed without appropriate and solid behavioural values and principles. Consequently, Balle and Balle (2009) suggested five core values under two main principles, which were originally developed by Toyota, namely, continuous improvement and respect for people. Organisation members at various levels should apply these different values in their ordinary day-to-day activities and relationships with others.

Continuous improvement

The first principle includes three values:

- **Challenge:** this represents learning focus on individuals rather than explaining what is required from them in terms of roles and tasks, in order to have long-term vision and the right attitude to face long-term challenges. Therefore, every individual has to challenge himself or herself on a daily basis to ensure organisation goals are achieved.
- **Kaizen:** this is associated with continuously improving processes and related activities. This is because perfect process does not exist and there is always room for improvement. Therefore, self-development and innovative thinking are fundamental characteristics.
- **Genchi Genbutsu:** this means that an individual should be visually and physically involved with project process to ensure efficient implementation in terms of finding related facts and making decisions in order to achieve goals.

Respect for people

- **Respect:** this is related to making every effort to understand people and other stakeholders in the business, taking their issues seriously, accepting others' responsibilities and building a high level of trust.
- **Teamwork:** this is based on developing individuals and team performance through sharing opportunities and team problem solving, which requires the engagement of people in an integrated team environment.

6.3.4 Seven Steps

This approach is acknowledged by the Seven Steps of decision-making or reactive improvement. It is a standardised approach which seeks to explore problems, realise causes and plan and implement solutions that are capable of providing effective working performance (Shiba and Walden, 2001). Indeed, there are similar structured methods with distinct numbers of steps, e.g. 8D and 9S (Jabrouni *et al.*, 2011). Shiba and Walden (2001) suggested that what really matters is the method selected for improvement, which involves a combination of ideas and experiences, as illustrated in the following classification of the

Seven Steps mechanism:

- **Identify the problem:** through describing and analysing the symptoms to specify clearly the problem that should be solved.
- **Gather information:** this is done in order to confirm previous assessment and investigate the sources of problems. Major and secondary causes should be described and identified along with determining the root causes of the problem.
- **Analyse the causes of the problem:** this is associated with analysing the gathered information and drawing an adequate conclusion.
- **Plan options and implement solutions:** evaluating the possible ways to eliminate the causes of problems and then implementing the best solutions.
- **Evaluate and test the effect of the alternatives:** an important decision should be made, following tests and the data investigation process, whether to return to step 1 or confirm and select the solution.
- **Standardise and control solutions:** during this stage the modification process can be implemented if necessary.
- **Reflect on the improvement process:** a new method is documented including the learning cycle of current experience that can help future consideration.

6.3.5 Hoshin Kanri

Hoshin Kanri (HK) is a strategic approach of planning and managing a business through the continuous improvement process. There is no obvious agreement on the interpretation of HK (Evans and Lindsay, 2005; Hutchins, 2008; Jolayemi, 2008). Dale (1990, cited in Jolayemi 2008: 297) defined HK as “a process of developing plans, targets, controls and areas of improvements based on the previous level’s policy and on assessment of previous year’s performance.” The four different components are the following:

- **Ho:** refers to course, direction or plan.
- **Shin:** means focus or needle.
- **Kan:** refers to control, alignment or channeling.
- **Ri:** means logic or reason.

HK principally focuses on making an organisation the best in its business by utilising all employees' creative thinking and knowledge power in order to strengthen an organisation's vision and make achievable strategic goals and aims (Hutchins, 2008). HK philosophy has been adopted in different industries and is considered a core aspect of a business management system (Jolayemi, 2008). Most organisations have some of its features in place as its application is also known as a policy control, policy management or planning for results. Indeed, it is an easy concept to understand and apply in an organisation regardless of its different names and interpretations which may be confusing. However, managing a business using HK requires planning development, a clear benchmarking system and effective use of continuous improvement tools and techniques at all organisational levels. As illustrated in Figure 6.3, Jolayemi (2008) categorised seven stages of the HK key planning process, which begins with the high level of an organisation's strategic objectives and ends with its specific target for improvement. Apart from the main planning process of HK, Hutchins (2008) outlined the main elements of its philosophy as follows:

- Organisation's goals, aims and future scope are generated from its vision.
- For effective adoption of HK philosophy, it is necessary for an organisation to develop strategy, policy, objectives, targets and benchmarking.
- Major strategy objectives must be aligned with an organisation's resources at all levels, and policy should be considered at each level of management.
- An organisation must develop a feedback loop of outcomes in order to facilitate the implementation of the Deming wheel or the PDCA cycle.

Jolayemi (2008) argued that very few HK studies have discussed the importance of pre-planning in terms of internal and external analysis. As developing an organisation's goals and objectives is insufficient without analysing its current practices and considering its internal and external changes (Mulligan *et al.*, 1996). Accordingly, good statements of vision, mission and value, which change according to market and environmental conditions, cannot be developed without pre-planning analysis. Thus, companies which realise the importance of environmental analysis in implementing Hoshin planning can maximise their efforts and increase their chances of business success. However, organisations can gain various benefits by implementing effective Hoshin planning; individuals at all levels will be clearly aware of their roles and objectives, organisation members will understand

organisation goals and act accordingly, a clear line of sight will exist, organisation objectives and resources will be aligned at all levels and employees' sense of belonging will increase as they are involved in setting objectives and improving the process of schedules and reviews.

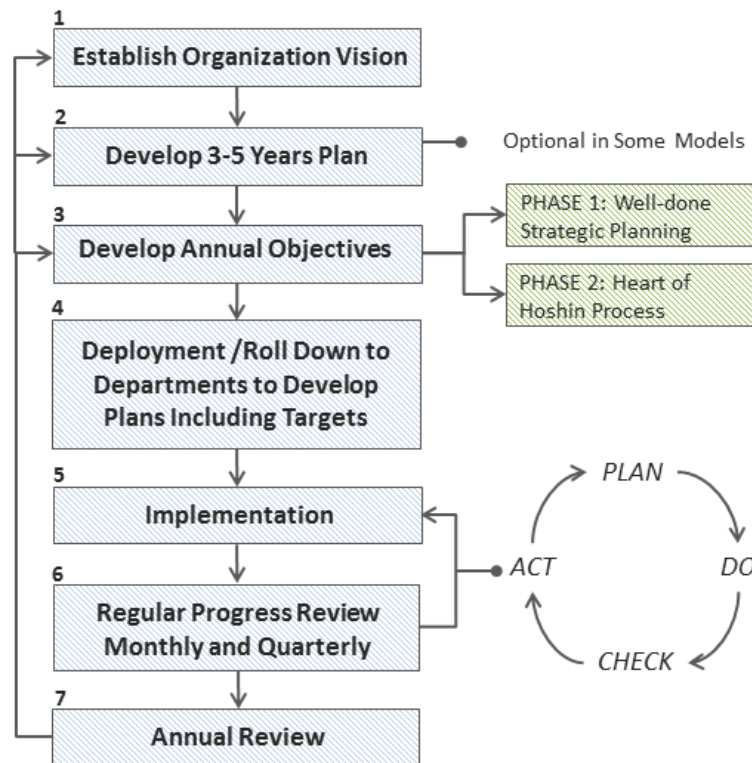


Figure 6.3: The Seven Steps of Hoshin Planning Process (Hutchins, 2008: 127)

6.4 Common Features of Problem Solving Approaches

In all industries, continuous improvement process is a fundamental factor for organisations, in order to survive in a business context and effectively and efficiently deal with various processes for creating products or delivering services in the current competitive environment and associated dynamic changes. Despite the differences between the various management and problem solving approaches that were outlined in the previous sections, they interrelate in some aspects in terms of process component, as illustrated in Figure 6.4. Jabrouni *et al.* (2011) suggested four main dimensional levels, namely, context, analysis, solution and lesson learned.

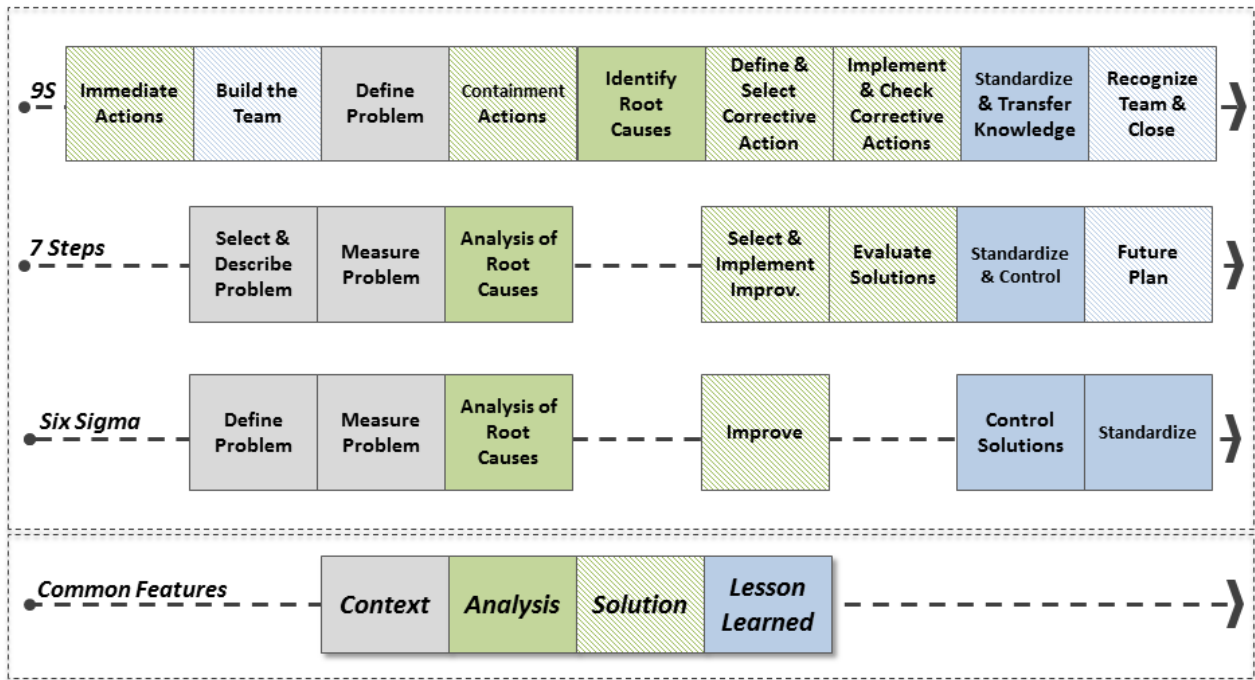


Figure 6.4: Common Features of Problem Solving Approaches (Jabrouni *et al.*, 2011: 127)

6.4.1 Context Level

The first level is related to event description, which provides a basic knowledge of the gap, problem or obstacle that needs to be analysed. It focuses on defining the fault, weakness or limitation of a specific process, product or service in a particular environment (Jabrouni *et al.*, 2011).

6.4.2 Analysis Level

On the second level, the identified problem is analysed according to its context, which builds a case experience. An adequate process of understanding the context environment, identifying problems and evaluating the effects on the context must be undertaken, in order to validate the root causes and effectively propose alternative corrective actions (Jabrouni *et al.*, 2011).

6.4.3 Solution Level

On this level, numerous corrective actions can be implemented. Plan, method, structure,

technique, framework and/or system can be adopted or developed to implement following an integrated process of building required experience through identifying the problem, studying its environment and analysing its causes (Jabrouni *et al.*, 2011).

6.4.4 Lesson learned level

The knowledge level represents the knowledge obtained from single or several experiences. Knowledge is the outcome of a learning process which involves evaluating, reviewing and reflecting upon the experience. Thus, recommendations or rules can be formulated and generalised, which reveals what should be done in order to prevent something or make something happen. Elaboration of the typology of the experience to which the knowledge might apply is encouraged (Jabrouni *et al.*, 2011).

6.5 Characteristics of Efficiency

Continuous improvement seeks to involve everyone working in a project or within an organisation to improve all factors related to the business on an ongoing basis by increasing efficiency through eliminating waste and increasing quality. It also emphasises integrating the benefits of teamwork practices with individual skills and creativity. For Sproul (2009), continuous improvement philosophy plays a fundamental role in determining the right focus of improvement, selecting the right time for this to happen, and using the right methods and adequate amount of resources. Stebbing (1990) argued that all organisations, whether engaged in manufacturing a product or delivering a service, must invest in quality management to achieve a superior level of efficiency. He described quality management as about controlling a process, ensuring quality, checking an event throughout each stage of product or service development, in order to reach more consistent quality. It is also about effective and efficient leadership and management practices and involves setting the standards and values for the working environment and targets. Organisations that follow quality management approaches are compelled to adopt new ways of thinking and acting. Therefore, quality management is managing an organisation's functions and activities, which are necessary to determine quality and achieve business excellence. Thus, quality management philosophy strives to provide continuous improvement on various functional levels of an organisation (Kaynak, 2003).

Stebbing (1990) argued that quality is not just associated with tangible items and their application is not only limited to manufacturing and engineering activities. Instead, it is also a people-based feature that considers their ability to satisfy a firm's specific requirements, which includes services if it is necessary for a project to understand and satisfy customer needs. As reported by George Shaw (cited in Stebbing 1990: 21), in his description of quality in the service domain, "there are only two qualities in the world, efficiency and inefficiency; and only two sorts of people, the efficient and the inefficient." Accordingly, every organisation should be striving for efficiency, which is expected by clients in the service industry. Various researchers and specialists have examined the relationship between quality management and efficiency, and introduced different sets of applications (Easton and Jarrell, 1998; Flynn *et al.*, 1995; Jung and Wang, 2006; Kaynak, 2003). However, prior to explaining quality management principles, the 12 different attributes of management efficiency (12 Cs) (Stebbing, 1990) are illustrated in Figure 6.5 below:

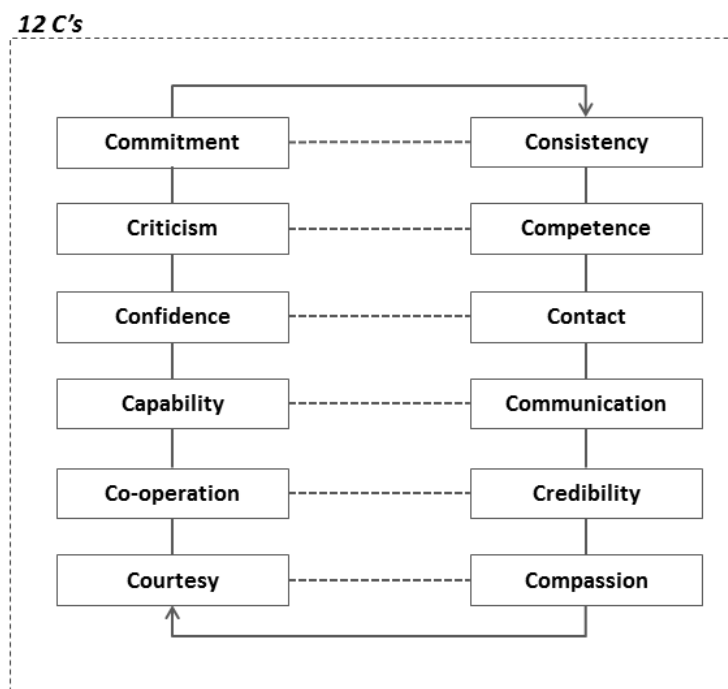


Figure 6.5: The 12 Attributes of Management Efficiency (Stebbing, 1990)

6.5.1 Commitment

An organisation which delivers a service commits itself to providing a specific type of service and its entire business is developed accordingly. The firm management is responsible for providing that service in an efficient manner which satisfies customers' needs. Successful implementation of any organisation's initiative requires commitment from top managerial level, which is required to establish strategies, develop objectives and effectively support individuals to attain organisation goals (Basu *et al.*, 2002). Such commitment will affect all the features of the business and, accordingly, appear in the form of quality management application. Hersey *et al.* (2008) stressed that excellent managers act in a positive way as other people continually observe and form impressions of managers' behaviours, attitudes, values and beliefs. Managers' actions and beliefs play a crucial role in forming individuals' commitments. Thus, commitment to all areas, whether the organisation, customers, self, people or task, is key for effective and quality management.

6.5.2 Consistency

An organisation should always act in the same effective and efficient manner. Its management practices and activities at all levels, in terms of performing a service, should be correct at the first attempt. Poor quality consistency will negatively affect an organisation's efforts in the area of quality management along with the possibilities to apply quality programmes efficiently (Carlsson, 1993). Therefore, the needs of an organisation must be fulfilled in the most effective and efficient manner.

6.5.3 Competence

The skills and competences required to perform services in a specific organisation depend on working methods. An entity cannot expect rapid engagement with individuals, who are qualified to be nominated, to understand a firm's working approaches and to fit the work structure. Organisations must have individuals with purpose, goals and direction, as well as the required competence, skills and knowledge, and motivate them to perform effectively. Different types of training can be implemented to achieve this, whether in the internal or external context. The former concerns good company performance through its personnel, and

the latter satisfying its customers as a result of the service provided (Stebbing, 1990).

6.5.4 Contact

An entity should provide an internal and external channel of contact between the management and workforce and the customer and personnel (Stebbing, 1990).

6.5.5 Communication

Communication takes place in all business activities. Written and oral communications are crucial for an organisation to perform effectively within a working environment, and play an important role in realising quality goods and services. Employees and customers should be informed on a continuous basis. Accordingly, it is necessary for an organisation to identify how customers and personnel will be kept informed of the new information, guidelines, updates or progress of its process. This includes identifying internal and external channels of communication between management, staff and customers, and defining methods and tools for distributing information (Stebbing, 1990).

6.5.6 Credibility

The most valuable asset of any organisation is its employees and customers. Delivering on promises and communicating clearly with a high level of transparency are crucial elements of an organisation's credibility. Organisations that need to build credibility, which supports efficient application of quality management, should demonstrate honesty and integrity in every single functional area (Stebbing, 1990).

6.5.7 Compassion

This feature is related to the organisational ability to be sympathetic, internally and externally, to individuals' and customers' needs. The support which an organisation gives to its personnel and customers increases their satisfaction level, which positively affects their commitment and, ultimately, quality programme performance (Stebbing, 1990).

6.5.8 Courtesy

Great outcomes can result from good relationships. Employees are more likely to perform well when they are fairly treated. This is implicit in external relationships as well. Courteous behaviour in an organisation can influence and inspire people to provide an effective working environment and achieve an organisation's goals (Stebbing, 1990).

6.5.9 Co-operation

The philosophy of co-operation values people as key resources in an organisation and holds that employees are capable of making great contributions to business results. Co-operation between management and other individuals within an organisation is a critical factor to the survival of a business. A firm must also use its cooperation skills and competences to work with customers and to establish and maintain positive relationships for future opportunities (Stebbing, 1990).

6.5.10 Capability

An organisation should have the authority, power, knowledge and resources needed to undertake a given service. The capability feature is highly associated with organisation competence, that is, the ability to perform its tasks (Stebbing, 1990).

6.5.11 Confidence

Employees' confidence level in an organisation has positive impact on business performance. An organisation can increase the confidence level among individuals by various methods, providing adequate training of crucial business aspects and allowing them to practise newly acquired skills. Another approach is providing feedback on performance, whether positive or negative, reward system, recognition programme and simple appreciation to identify good practices. Direct communication from the top management to lower levels is capable of maximising confidence, as it helps to reassure individuals that their work highly contributes to an organisation achieving its goals. Encouraging an organisation's staff to become involved in personal development programmes is an effective way to boost their confidence (Stebbing, 1990).

6.5.12 Criticism

An organisation is always encouraged to follow a critical approach to employee performance and outcomes. This can be implemented through placing emphasis on self-criticism among employees (Stebbing, 1990).

Thus, quality management is a holistic philosophy of efficient management, integrating various methods, tools and characteristics, which strive for continuous improvement in terms of various organisational functions and activities (Kaynak, 2003). However, numerous study versions of related focus and interest have attempted to identify what elements formulate the practice of quality management in an organisation. Jung and Wang (2006) noted that most framework development initiatives are based on the Malcolm Baldrige National Quality Award (MBNQA) framework, which was established in the mid-1990s. The Baldrige framework was developed by the National Institute of Standards and Technology (NIST), and it focuses on the importance of performance excellence, in terms of management practices, public and private organisations (NIST, 2014). The Baldrige framework has several principles, namely, strategy and planning, leadership, information and analysis, customer focus, process management and people management. As shown in Figure 6.6, according to Jung and Wang (2006), these principles have been adjusted and modified following reviews on more recent literature including numerous qualitative studies.

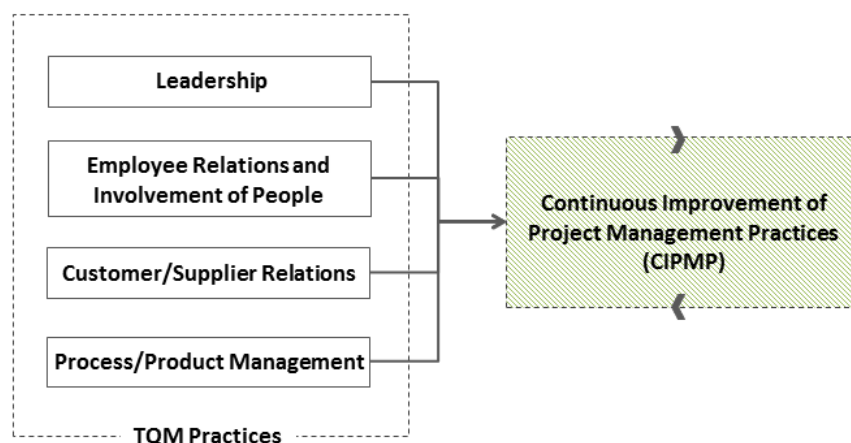


Figure 6.6: TQM Elements and CI of Project Management (Jung and Wang, 2006: 718)

- **Leadership:** this is the most influential quality factor as it affects the management

and development process. Leadership has significant influence on various crucial elements of an organisation. Organisations are able to adjust and enhance their organisational culture through leadership practices when managing various processes and leading subordinates. Furthermore, the commitment and support of top management levels are fundamental when a firm aims to change its culture and implement a quality development programme. Quality practices are an essential part of organisational strategy, developed to reflect positively an organisation's mission and align its future strategies with the objectively established goals. Leadership, therefore, is highly associated with the overall direction of an organisation that has clear objectives to achieve. Daft (2008) stated that several aspects of effective and efficient leadership practices can significantly contribute to an organisation's success. Team building activities, team support, goals emphasis, employees' engagement, individuals' motivation and positive interaction between staff and business vision are crucial dimensions that should be considered in order to achieve high performance in an organisation.

- **Employee relations and involvement of people:** this includes teamwork, the empowerment culture of decision-making and a proper scheme for recognition of employees and compensation. The involvement of people and employee relations can be considered essential components of a continuous improvement programme. According to Amah and Ahiauzu (2013), an organisation which adopts a highly involved culture is more inclined to encourage its employees to participate and creates a sense of ownership among individuals, which leads to better commitment towards the organisation. The quality of decisions and their implementation process can be improved by allowing an organisation's members to contribute to the decision-making process. Indeed, a greater feeling of responsibility, encouragement, support and motivation can lead individuals to work hard and participate more in an organisation's improving performance process. At the same time, organisations should provide adequate training programmes for employees in order to equip individuals with required skills and competences.
- **Customer/supplier relations:** meeting or exceeding a customer's expectations is a management focus that brings customer satisfaction. By fulfilling all stakeholders' needs and following a dissemination process for all related

information, this provides adequate understanding of the business and enables effectiveness in managing such a relationship. This, as well as employees' empowerment, facilitates decision-making processes and positively impacts customer relations. However, organisations must be expert in their business and understand well customers in order to manage effectively the relationship (Val and Dee, 2000).

- **Process/product management:** the management of business technical aspects is the difficult principle of quality management. Understanding the business environment, including all interrelated business features, and the appropriate use of data acquirement process and analysis techniques have a significant influence on process/product management. It enables organisations to manage multiple processes as an integrated system and focus on the key processes of success, which, ultimately, lead to greater efficiency.

6.6 Proposed Theoretical Framework

The area of project management is the main research interest. Any temporary attempt undertaken to deliver a service, create a product or produce a result is acknowledged as a project (Project Management Institute, 2000). Once the start and end time is agreed, including the associated activities or processes of organising, planning, arranging and controlling resources and actions, as well as application of unique skills, competences and knowledge, management features appear within the project and form project management experience (Meredith and Mantel, 2009). The project management concept was initially developed in construction and engineering activities and military field, which represent its major foundation. Project Management Institute (2000: 8) defined project management as:

Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the application and integration of the project management process of initiating, planning, executing, monitoring and controlling, and closing. The project manager is the person responsible for accomplishing the project objectives.

Project Management Institute (PMI), Association of Project Management (APM) and other organisations who share the same interests, have offered various tools, guides and standards for developing good project management practices and processes. Cleland and Gareis (2006) argued that project management knowledge, techniques and tools can be applied to any industry and its various businesses. However, not all organisations can utilise the same principle and set of management practices, which are effective elsewhere. The key element for an organisation is its strategic ability to understand its internal and external environment and identify what matters most, in order to adopt the most appropriate project management application. Thus, the proposed theoretical framework aims to support the existing knowledge and practices of organisations and their project managers within the research specific context, airport construction business, which represents the researcher's strategic philosophy, as shown in Figure 6.7.

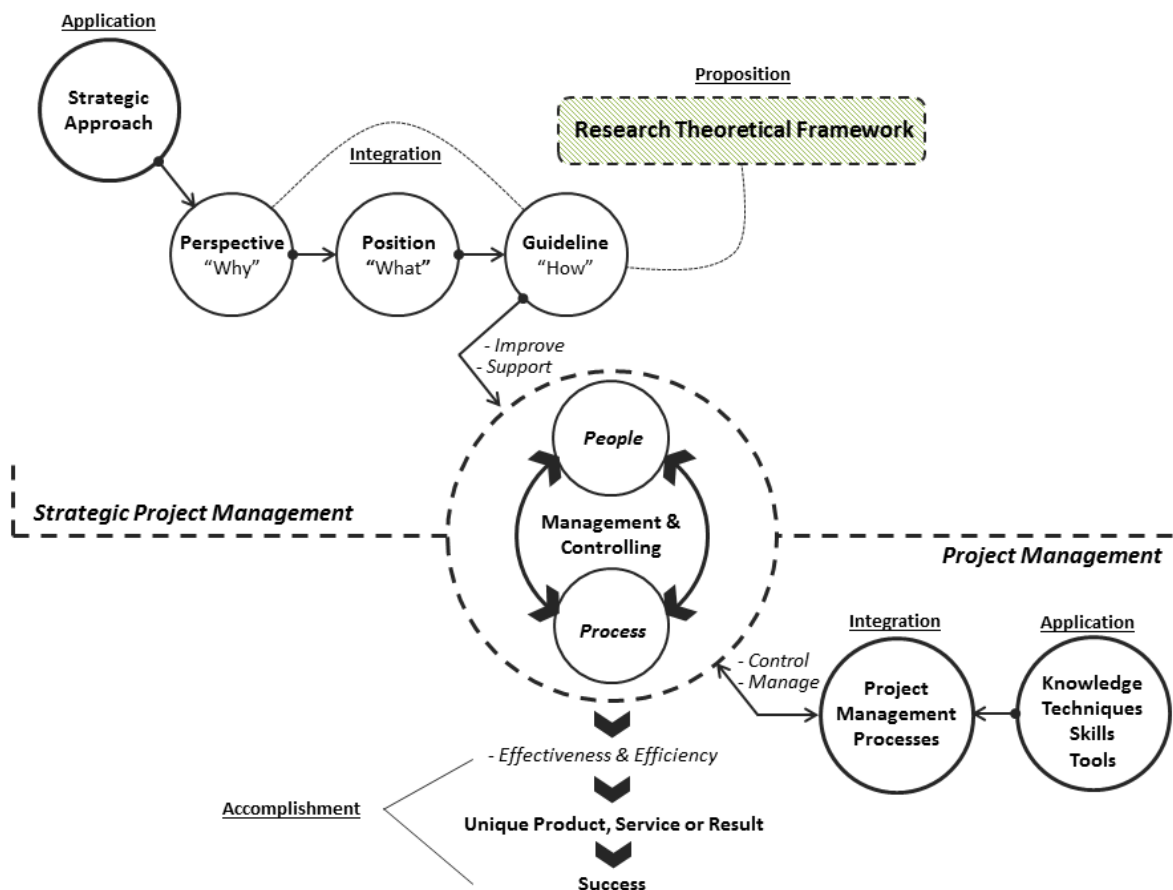


Figure 6.7: The Researcher's Theoretical Framework Philosophy

The previous chapters provided adequate knowledge and understanding of the research foundation. First, attention has been paid to the primary research context, the construction industry, and its various components, players and methods of project delivery. Reviewing management practices within the construction industry has led to consideration of crucial misapplications. Accordingly, strategic management knowledge, particularly project- and human-related practices, has been examined with regard to the construction industry context. Subsequently, the research narrowed its scope to airport business, mainly the construction management activities of airport projects. Various dimensions of airport business were reviewed, and the processes of several airport construction projects analysed in terms of rationale for construction projects, project management perspective, major challenges and obstacles and success and failure factors (e.g. Beijing International Airport – terminal 3, Incheon International Airport – new airport, Shenzhen Baoan International Airport – Terminal 3, Zurich International Airport – expansion programme, Changi International Airport – terminals 3 and 4, Heathrow Airport – terminal 5, London airports’ preparations for the 2012 Olympic Games, Denver International Airport – expansion project, King Abdul-Aziz International Airport – new airport and Brazil’s airports’ preparations programme for the 2014 World Cup and the 2016 Olympic Games). This is done to acquire sufficient knowledge and understanding with regard to airport construction business. The internal and external environment of project management practices have also been considered by reviewing related studies and project reports (Adrem *et al.*, 2006; Airport Authority Hong Kong, 2012; Banks *et al.*, 2012; Binnekade *et al.*, 2009; Forsyth *et al.*, 2011; Khalafallah and El-Rayes, 2008; Wang *et al.*, 2011). This led the researcher to identify gaps and weaknesses, which provided a solid foundation to develop a research framework. Indeed, the proposed framework has been established through various phases of research development, which can be illustrated by the research chapters flow as shown in Figure 6.8. These will be further refined, modified or restructured to achieve the study conclusion.

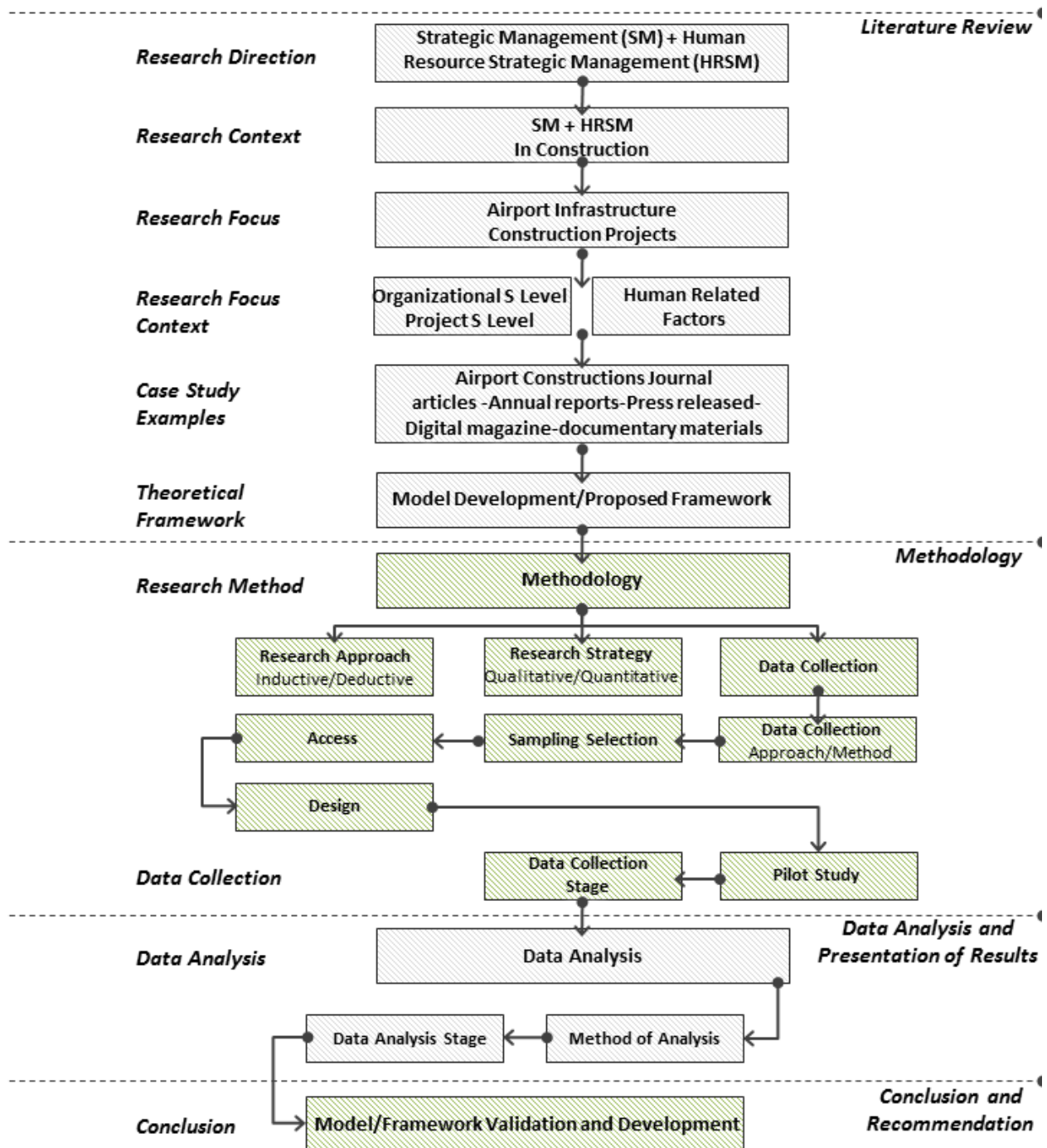


Figure 6.8: Research Structure and Development Phases

Hence, the following sections will investigate and justify the elements of the proposed strategic framework, which will be used as a foundation of the exploratory model describing how framework theoretical components/themes correlate with project effectiveness and performance.

6.6.1 Theme A – Project Team Formulation

The construction business has been widely acknowledged as having a fragmented approach. Project delivery teams and other project stakeholders work within an environment where an adversarial culture of different backgrounds, competences and attitudes exist. Integrated success within mega construction projects is measured in terms of the achievements of individual organisational standards, rather than traditional hard project outcomes, namely, schedule timeframe, cost estimate and expected quality. The set of important soft outcomes includes customers' and employees' satisfaction, individual development, an organisation's future benefits and professional and effective relationship between all parties involved in the project. Young and Samson (2008) argued that in the process industry, project team management factors play a significant role in achieving success and are more important than the technical side of project management. By focusing on project team design and structure, a management can easily realise maximum benefits from project participants, which facilitates the achievement of goals and leads to an organisation's desired success. However, this requires the development of cross-functional project teams through project managers, who can effectively prioritise and deliver project goals for each project to various team members. Hackman (1987) stated that an organisation should play an important role in its projects and teams, to develop clear goals and continuously provide top management support. Particularly, in the construction industry, project team integration increases team performance through improving the effectiveness of teamwork, which is an important factor in improving project delivery processes (Baiden and Price, 2011). Integration, in a construction project, refers to an effective team environment where collaboration is evident in work behaviour, methods and practices, which lead to the free exchange of information among distinct project parties. These parties have single project objectives and focus, and, accordingly, share various skills, competences and knowledge, and thus eliminate all traditional barriers between different participants and design and construction phases, in order to improve the delivery of a project (Austin *et al.*, 2002). Thus, following the development of a fully integrated team a new and unique team identity emerges, in which various interests, successes and failures are shared. The nature of construction prevents individuals from acting alone, thus they share ideas, judgements and multiple skills required to perform in such an industry. Consequently, team activities are highly associated with construction work. However, various studies have demonstrated the potential benefits that can be achieved when team foundation is based on process and team integration structure (Baiden *et al.*, 2006;

Hayes, 2002; Katzenbach and Smith, 1993; Scarnati, 2001). Baiden and Price (2011: 129) defined project team integration as:

Where different disciplines or organizations with different goals, needs and cultures merge into a single cohesive and mutually supporting unit with collaborative alignment of processes and cultures.

The necessity of team integration is applicable to construction projects where numerous organisations including various teams and stakeholders are brought together as a construction project, which is naturally fragmented in terms of project procurement and delivery processes. Furthermore, different interests inked to construction activities and challenges associated with getting team members to understand other individuals' contributions do not encourage integration between parties involved throughout the entire construction project phases (Baiden *et al.*, 2006). Thus, managers or decision makers within construction projects need to address effective integration between parties involved in a single project, who have to share information and make various decisions in order to break down barriers and solve disagreement issues. Team and project studies have proposed various models and defined numerous ways of formulating an integrated project team (Bandura, 2000; Kirkman and Rosen, 1999; Ranney and Deck, 1995; Schmidt *et al.*, 2001; Young and Samson, 2008). However, the integrated team factors that form the first component of the research framework can be classified into five dimensions:

- **Project Team Design:** cross-functionally team refers to a team that comprises members from different departments involved in the project. It plays a crucial role in effectively using project cycle time and may significantly limit it.
- **Project Goals:** clear goals help in orientating a project team towards mutual objectives, aligned with client/project or an organisation's strategic goals. Management should also emphasise cooperation between team members and consider it as another crucial goal of the project. Once management set well-defined project goals and clearly explain these to team members with full implementation of the collaboration concept, superior project performance can be achieved.
- **Project Support:** senior/top management support should be aligned with the

project support system at the operational level, which provides authority and power needed as well as all required resources, whether human, financial or technological, for project success.

- **Problem Solving Strategy:** this factor is associated with structuring a clear method for issue negotiation and problem solving. It concerns how team members react when faced by a problem, in terms of evaluation process, brainstorming sessions, selection of best alternative action and ways of asking for assistance. Solving any operational or technical problem in a fast manner can significantly improve a project's quality and speed, which leads to greater financial and non-financial outcomes.
- **Project Team Efficiency:** a team with belief and confidence about providing high quality work, which can be effective when working together, has a high commitment level among its members, who are more likely to work hard for team interests towards desired outcomes. Consequently, task effectiveness and high level of productivity can be achieved.

6.6.2 Theme B – Project Team Strategy

Each project in the construction industry needs various professional, with different knowledge and experience. They are required to work and coordinate with each other. Collaborative spirit and various key elements among team members are essential if they are to work together efficiently to achieve project goals. Project managers always try to find a better team strategy and create synergy between members when undertaking construction activities, in order to realise an effective team environment. Indeed, financial and non-financial benefits can be realised through the effective process of team building in a project. Distinct interests and associated conflict in construction works may lead to lack of effective team practices. Project participants' relationships should be carefully considered in order to avoid additional pressures and challenges. Bender and Septelka (2002) stated that the competitive nature of construction might negatively affect teamwork and cause its breakdown. The combination of different functions and phases associated with a construction project contributes to industry fragmentation. Such fragmentation prevents consensus between project parties and communication, and obstructs agreement and understanding between participants, which often leads to claims and litigation (Chow *et al.*,

2005). The current state of global construction business and its associated multinational projects lead to additional challenges when trying to organise and unify project teams on a large scale including consideration of industrial, geographical and technological factors. Indeed, the major challenges of a current construction environment arise when managing projects under such conditions. However, the individual skills and competences of various parties involved in a project are required and must be brought together effectively in the right sequence. All people involved in the project should be motivated and committed to the project. A traditional construction project team comprises mainly owner/client's representative, design consultant and main contractor, and all of them working together under specific contractual agreement. Positive relationship practices should develop between these parties in order to realise project success in terms of cost, time, expectation and opportunity of future work. Walker (1996) stated that these objectives are achieved by effective teambuilding strategy. Accordingly, one of the prime responsibilities of a project manager or project management team is to establish an effective relationship between participants. Teamwork strategy is considered as a key factor that leads to superior team productivity in construction business (Chan *et al.*, 2001). It affects numerous aspects of construction performance, e.g. planning activities, team building process, communication and, in particular, time factor. In line with team effectiveness, Chow *et al.* (2005: 18) observed that "well-blended team is like a well-running piece of machinery; each part of the machine interacting smoothly with the next. If one part is out of synchronization, the machine will cease to function to its maximal effectiveness." Apart from the benefits that accrue from an effective teamwork environment, Rabey (2003) and Scarnati (2001) identified several factors that can potentially prevent teamwork development. These include ineffective communication, lack of trust and resources and inappropriate use of team approach. Teamwork is not just bringing people together in a workplace; it can also be defined as significant effort to cooperate, coordinate, support and share information on the part of every member of a team, in order to achieve a common goal (Bender and Septelka, 2002). Chow *et al.* (2005) proposed five characteristics of effective teamwork that is applicable to construction business activities:

- **Clear Objectives:** all team members from various organisations and they should have a clear understanding of a project's overall success factors, goals and objectives, in order to create a high performance environment. Project managers/project team management have also to establish clear objectives for the

temporary team, in terms of what is expected from individuals and how they will work together. They have to spend an adequate amount of time defining and clarifying project goals and individual roles during the initial stage of developing the project team to minimise the time needed to solve future problems and misunderstandings. An effective team manager/leader strives to integrate individual personal goals with project team goals and works hard on motivational factors. Thus, team goals should be shared by all and team members will feel involved in their achievement and care about the outcome.

- **Team Trust:** trust dimension does not have the same meaning for all people. However, in a project team it is all about the level of team comfort for each individual. It is also about an individuals' ability to understand others' opinions, values, attitudes, backgrounds and cultural differences and, accordingly, deal with them. Trust factor significantly affects project information flow, which is a key element in a construction project. Most theories of team development and organisational effectiveness emphasise the important of building trust and respect at various organisational levels and within project teams. Teamwork is not possible where there are cynical views about others. However, developing and building a trust between people who work together for the first time in a short-term project is not an easy task for a project management team. Learning about each other's strengths and capabilities in the project and developing personal relationships play a crucial role in providing understanding between team members, which facilitates the trust building process. Involving the right people in the right decision-making task is an effective method also for a project manager to adopt. Consequently, healthy relationships can be built to increase team synergy, which is required for project success.
- **Team Cohesiveness:** this relates to members' united feeling when working together. In a project team members should work together and feel a sense of belonging and believe that individual success means project team success. They have also to resist anything that divides them into different groups within their project team. Therefore, cohesiveness in a project refers to the degree of mutual attraction or the strength which project members have that helps them remain as a team. Once a project manager can create a highly cohesive team, less attention will be associated with the project and misunderstanding between various parties will be

minimised. Different factors facilitate project managers' responsibilities in providing cohesiveness in construction projects: satisfying the personal needs of project team members, maintaining a high level of trust, establishing team guidelines and norms and emphasising cooperation instead of negative competition.

- **Team Interdependency:** this is associated with the mutual dependence between team members; that is, they have the required knowledge and understanding to combine their efforts. The construction business is aligned with numerous activities that combine and contribute to project completion. These activities are undertaken by various functional areas, which should be coordinated by team members as much as possible in order to achieve a team's desired goals. A construction team comprises individuals with different experiences, abilities and technical skills, and when working together individuals can participate in developing solutions by sharing ideas and opinions, and excellent performance can be reached ultimately. By working together team members can share resources, support each other and share ideas. As a result, they become more able to understand each other's roles and abilities, which mitigates issues and significantly helps problem solving processes.
- **Team Enthusiasm:** a project team in a construction project needs energy and spirit to maintain effective efforts. Enthusiasm is a key factor that drives great performance. Project managers/leaders play an important role in achieving this by developing a positive environment that adopts a 'can do' approach, which provides an effective decision-making process and increases individuals' level of commitment. Recognition of achievement in a job supports project managers in providing an effective working environment for employees. Indeed, this psychological practice and all related-processes require a clear objective which needs desire and ability in an individual to realise.

6.6.3 Theme C – Stakeholders Engagement

Construction projects often involve many stakeholders, in particular, airport projects associated with a large number of internal and external stakeholders, who hold, to some extent, equal right or influence over the project lifecycle or have claim on the provided service. Consequently, the potential for conflict between them is relatively high. Practices

and principles adopted by organisations to cope with this are vital and have a very strong effect on project success. Employee and stakeholder engagement concept is something more than traditional communication between key people in a project. Understanding the context or key process and relationship that project members should have with each other is a fundamental requirement in airport projects. It includes relationships between various organisations in terms of teams, managers and individual development. Melcrum (2007) stated that there is no single technique suitable for all projects or one that is better than another; instead, there are effective procedures that depend on an organisation's desired results and business context. Simplicity and transparency of engagement procedures are key to success; this means focusing on mutual outcomes, being effectively strategic about what each party is doing and why, as well as involving and informing stakeholders of day-to-day activities and decisions. Stakeholders' engagement can be seen from a management or ethical perspective, and it is rarely associated with knowledge which facilitates project participants' learning and social experience (Mathur *et al.*, 2008). Innes and Booher (1999) observed that engagement process, if properly designed, between parties in a project, who have distinct interests as regards a project's outcomes and different knowledge of working practices, can contribute to numerous positive results. It develops trust and relationships, provides mutual understanding, helps provide shared problem behaviours, encourages innovative strategies, eliminates conflicts and increases the ability to work together towards good performance.

Greenwood and Anderson (2009) argued that employees are the most important stakeholder that help and support organisations in meeting a firm's obligations to various stakeholders, clients, government bodies, customers, business partners and investors. During a project lifecycle employees are closely attached to the organisation and have a crucial role in representing the firm when dealing with different stakeholders. Karlsen (2002), in contrast, stated that a project's client and end users should receive high priority from organisations as they are the most important stakeholders and key to success. He noted that in most situations a project manager should work to strengthen the relationship with stakeholders. However, in some projects individuals and groups can belong to more than one category of stakeholders. In order to ensure effectiveness and efficiency while dealing with them, willingness and a high level of understanding, knowledge and skills is required. This is the case in airport construction projects, where the same group represents different stakeholders, e.g. an airline

client can be the owner and most airport users act as owner of a project development programme. Accordingly, a range of duplicated roles have to be managed effectively, which places great emphasis on each organisation to be engaged with all stakeholders. Chinyio and Akintoye (2008) identified several potential benefits of stakeholders' engagement activities. This increases stakeholders' level of commitment and the efficiency of an organisation, reduces waste of time and materials, reduces conflict risk and associated litigation, provides better services and products to end users, increases motivation and enhances overall organisational learning.

Numerous organisational management studies state that increased chance of success is associated with organisations which adopt an active engagement process among their stakeholders (Lerbinger, 2006; Roome and Wijen, 2006; Smith and Love, 2004; Tang *et al.*, 2008). Chinyio and Akintoye (2008) proposed a strategic approach for managing and dealing with construction stakeholders:

- **Top-level Support:** top management support is essential for effectiveness, whereby they have to develop a systematic method for managing and dealing with stakeholders. The system should be clear to all stakeholders and include behaviour principles and procedures when faced by difficulties. Organisations are encouraged also to have a unit or individual to be responsible for overseeing stakeholders' management activities as well as to develop project relevant skills.
- **Project Information:** a very effective tool for maintaining relationships is communication. All stakeholders should understand different parties' expectations with regard to project outcomes, and be continuously informed about project updates. When stakeholders' urgency level is not high, websites, on-site publications and newsletters are very useful, while others who are highly interested should be fully informed and particularly consulted prior to making critical decisions. Such communication should involve an adequate assessment of stakeholders' status to ascertain the amount of information that should be shared.
- **Stakeholders Meetings:** meetings and workshops are particularly useful for managing stakeholders' relationships and can be used to engage all stakeholders at the same time. Regular meetings are scheduled for non-urgent and routine issues in order to keep parties informed, meet various stakeholders' needs and discuss

disagreements. However, in the event of urgent matters and serious issues, project managers can call for an ad hoc meeting.

- **Concerns and Actions:** organisations which desire to maintain healthy and effective relationship practices with their internal and external stakeholders should address expected issues and obstacles in advance. Being proactive in dealing with others over the project cycle encourages all partners, groups and individuals to raise any issue of concern and to discuss it with involved parties and find a speedy resolution.
- **Stakeholders' Negotiation:** a key method of resolving disagreements and stakeholders' differences. Client's change of mind, related-ideas or project scope are characteristics of the construction industry. This might lead to various claims whether in terms of additional time, expenses or resources. However, negotiation is a great tool to settle such claims and sometimes produce win-win results for all parties concerned.
- **Incentives:** this is related to any form of reward offered to individuals in order to encourage them to demonstrate their strengths and capabilities. Project managers should develop incentive strategies in order to encourage specific actions that lead to enhanced performance and produces greater outcomes. Through individual reward schemes or awards, managers not only improve day-to-day activities, but also help an organisation to achieve short- or long-term business success and growth. Incentive plans inspire and motivate tasks that have not yet been completed and direct employees in the direction where an organisation wants them to go. To develop an incentive plan, objectives must be clear including how the programme can benefit an organisation and individuals. Indeed, it can be considered as a management tool that helps a firm to achieve its specific goals and objectives. An incentive is not necessarily tangible or financial rewards; instead, it is something which can impart the fundamental values of an individual, e.g. end of project celebration, employees' anniversary celebration, the best employee of the month and letters of appreciation. However, incentives can be adopted for external parties, e.g. contractors, suppliers and consultants. Organisations use this form of incentive also as a powerful motivational tool to provide greater performance and achieve superior goals. Moreover, it can also be applied to maintain relationships for future working opportunities or as an option when issues arise during

construction work, e.g. to ensure project completion on time or, in some cases, before agreed timescale.

6.6.4 Theme D – Leadership Structure

Leaders' main role is to coordinate and manage project team activities, evaluate individuals' performances, assign responsibilities to team members, develop individuals' skills, abilities and knowledge, motivate subordinates, develop a project plan and provide a positive working environment (Salas *et al.*, 2005). Accordingly, the relationship between team performance and leadership affects the evolution process of a project team. Furthermore, the knowledge, skills and understanding of individuals shape the structure of leadership. Odusami *et al.* (2003) argued that leadership style will significantly affect the overall performance of a project in the construction industry. Indeed, since works related to construction business require huge team effort, leadership must have significant influence on a project team and, ultimately, construction work performance. Leadership structure in airport construction projects is associated with a high level of segmentation, where a single project comprises various sub-projects, and different project managers/leaders are needed for each project. These managers may not belong to the same organisation and they work temporarily in a single project team. Complexity and ambiguity are highly expected in such situations, which make it difficult for some external leaders to perform leadership functions successfully. In airport construction business, a new type of leadership is needed which effectively responds to the unique environment. In line with this, management professionals and researchers suggested that in a highly complex and uncertain context, shared leadership style is more effective than individual leadership (Crevani *et al.*, 2007; Clarke, 2012). Shared leadership is needed when various people who have different culture, background, views and principles join together and use dialogue and collaboration practices to deliver a set of activities and objectives in order to achieve a common objective. Thus, shared leadership suggests that no single leader/manager performs all leadership functions; instead, certain individuals accomplish collectively the entire project activities.

Airport organisations should nominate construction leaders who have ability to deal with internal and external people and a greater number of ambiguities. Due to the extreme variations between each construction project in airport business, in terms of size, project

duration, stakeholders involved and technical requirements, leaders' learning and problem-solving competence are key characteristics and more important than planning and controlling skills. Problem-solving activities require high and professional levels of knowledge sharing and effective response to emergent events. Clarke (2012) mentioned that most leadership problems in complex projects that have investigated for many years are due to lack of leadership skills, as most organisations focus on leader's technical expertise. Pearce (2004) stated that shared leadership becomes a fundamental element when a project involves interdependence, requires creativity, includes emergent group working activities and is associated with a high level of complexity.

According to Crevani *et al.* (2007), empowerment degree is the main reason for all initiatives concerning the development of shared leadership style. The major concern is to avoid power and authority concentrating on one individual. Two strategic dimensions have been identified as a foundation for leadership practices in airport construction projects:

- **Leadership Type:** without proper leadership practices, project team members are difficult to identify and effectively perform. Leadership types significantly influence a team's motivational elements and cognitive and knowledge development. It also affects team members' behaviours, attitudes and beliefs. An organisation should determine whether traditional leadership or shared leadership approach is better for its specific project environment. The characteristics of leaders in each construction project phase should be considered, in order to nominate effectively the most qualified leader for a particular mission and select proper leadership types for projects.
- **Empowerment Degree:** this dimension is related to power, authority and responsibility in the overall construction project journey. Project information and stakeholders' communication activities are highly influenced by the empowerment factor over the project lifecycle. Empowerment-related matters within an organisation can be performed as a shared function directed by all stakeholders, or controlled by top-down leaders. Due to numerous phases and key stakeholders of construction projects, sharing power and responsibilities can be adopted; an organisation that has the most relevant skills and experiences of a specific phase leads the project.

6.6.5 Theme E – Project Culture: Behaviours and Relationships

Developing individual assumptions, values and beliefs that are shared by project members, and maintaining a certain type of behaviour, focus and direction depend on several aspects of project culture. Construction projects are highly fragmented and many parties work for various organisations and, in most cases, have no experience of working together. Bringing them together to complete a project within a defined period of time requires harmony and clear policy of relationships. The collaborative work in the construction business and information related to exchanging activities, along with expected issues and disagreements between different participants, increase the demand for developing effective relationship principles. However, Kadefors (2004) mentioned that relationships in construction projects are often inefficient and adversarial. Project managers have to play a crucial role in developing and delivering participants' shared values, in order to provide a superior relationship working environment. Shared assumptions, values and beliefs are significantly important, and perceived as individual tools for achieving a successful project team. A number of practitioners and recent students consider trust as a fundamental factor in developing effective construction relationships between various parties (Kadefors, 2004; Khalfan *et al.*, 2007; Ling and Tran, 2012; Mcdermott *et al.*, 2005; Ngowi, 2007).

Trust is not a form of behaviour; it is an ambiguous and complex psychological concept. It has different dimensions, phases and development processes, which depend on context. Kadefors (2004: 176) offered the following definition: “trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another.” Trust is a tool that creates confidence, commitment, respect and transparency in relationships (Ngowi, 2007). Mcdermott *et al.* (2005) suggested that the concept of trust is not easy to understand, which makes it difficult to be managed. Kadefors (2004) explored the complexity that is associated with its phenomena, where trust has three different levels. First, it is described as *calculus-based trust*, which develops when the trusting individual realises benefits from the trusted party. Second, the *relational trust* appears over a period of time between individuals who interact whether through direct experience or information exchange. The last level of trust relates to organisational level, which is known as *institution-based trust*. This form of trust refers to systems, norms and

professional practices developed by an organisation in order to shape conditions that are necessary to build trust, whether between various individuals or business partners.

Khalfan *et al.* (2007) investigated issues related to trust concept within the construction industry and found three main dimensions. Trust is highly associated with honest communication between people. When the trust exists, individuals become more open, honest and willing to share critical information with various team members. Indeed, these values are crucial while undertaking a construction project that includes numerous stakeholders, such as airport projects. This is because it requires real information of a situation to be shared when needed and, accordingly, when there is clear communication in such business, firms can ensure better project delivery. Reliance has been identified as another main factor; people can rely on received information when there is trust, which is required all the time in construction activities. Besides relying on people, trust plays an important role in delivering expected outcomes from competent people. When organisations fail to deliver expectations, suspicions arise and may negatively affect an organisation's future business.

When a project/organisation is aligned with a high level of fragmentation, mistrust and poor communication, considering the project culture is key to success. Understanding construction project culture is essential to providing an effective environment which improves the processes of project delivery and construction outcomes, particularly in large-scale construction projects (Ankrah *et al.*, 2008). Effective culture in an organisation has much influence on various attitudes, habits and behaviours in a construction project, e.g. health and safety procedures (Cooper, 2000). The construction industry is one of the most hazardous industries in terms of serious injuries. The superior performance of safety procedures on construction sites is an indication of an effective culture. Sawacha *et al.* (1999) noted that safety became the most important concern for the majority of construction organisations. However, risk management reactive approach, lack of individual safety knowledge, inadequate safety training activities and lack of safety supervisors at sites are behind most accidents at construction sites. Kines *et al.* (2010) found that project managers or safety representatives' daily verbal communications of safety-related matters with the project team and site workers have significant influence on increasing levels of safety.

Thus, there are numerous views about what culture means to an organisation, but every firm needs to have its own focus with regard to cultural aspects that improve its operational activities. It is important to consider that operational activities, professionals and individuals are the major drivers of culture in an organisation, and they play a vital role in developing, testing and maintaining the culture, respectively. The review of project culture of construction projects, and considering the crucial aspects of culture needed within a research context, airport construction, several fundamental dimensions can be identified:

- **Relationships Values:** this aspect relates to organisational method of building relationship values, including trust, commitment, respect and transparency. Different project participants should experience working together on a day-to-day basis and have a joint understanding of individual roles and each project aim. Approaches to sharing information and solving problems should be in place and clear to all parties. Project managers/leaders have to encourage individuals to reward and support each other's trust-related behaviours. Reasonable behaviours have to be adopted, in terms of fair and professional working practices between various individuals in the project team.
- **Habits/Behaviours/Attitudes:** identifying the key drivers of organisational culture and developing strategies that enable a firm to eliminate obstacles, misunderstandings and negative behaviours in a project team is crucial. Project managers can utilise comprehensive induction sessions for project teams and all new members joining the team at any project stage. Workshop arrangements are useful as an alternative method to capture updated information and maintain close relationships between a project team. Clear project principles, team working approach and related cultural aspects significantly affect individual behaviours, leading to effective relationships between a project team and the numerous parties involved in the project, which, ultimately, secures project success.
- **Proactive Safety Strategy:** the most influencing factor of safety performance concerns organisational policies and project managers' adopted approaches for delivering them to a project team and site workers. Project managers and/or safety representatives are encouraged to develop effective proactive safety strategies including several aspects, namely, psychological, technical and environmental.

Psychological factors concern safety verbal communications between project managers and project teams and site workers on a daily basis, while the technical and procedural factors relate to the provision of essential safety clothes and equipment, organising various safety training for everyone involved in the project, in order to have good experience and technical skills, and publishing safety booklets. Another crucial dimension is related to environmental and project policy, where project managers and safety representatives effectively develop safety policy and make sure that required posters and signs are provided on construction project sites.

6.6.6 Theme F – Internal and External Communication

One of the most important success factors in a construction project is communication. However, many issues are related to miscommunication (Perumal and Abu Bakar, 2011). Stakeholders in a construction project create and share an enormous amount of information between each other throughout a project's lifecycle, whether on the demand or supply side. Airport construction project activities involve many stakeholders dealing with a large number of communication instruments (requirements, contracts, specifications, reports, manuals, schedules, drawings, computer files, print-outs, agendas and minutes of meetings). These require proper communication strategies in order to reach understanding, provide effective working practices and ensure the success of the project. Thus, organisations and project managers should provide an open and clear communication environment through developing meaningful communication strategies for both internal and external stakeholders, those who are at various levels of the organisation and project team, as well as other individuals and groups involved in the projects.

According to Bender and Septelka (2002), ineffective practices of communication lead to misunderstanding, tension and stress between team members, which significantly affects their productivity and lowers commitment and morale. Consequently, a project will experience time and financial loss. In order to have effective project communication, Bender and Septelka (2002) suggested three important dimensions of communication: relevance, responsiveness and occurrence. Relevance is related to project communications that are clear, focused and task-oriented. Responsive represents easy access to other information and

the ability to listen and share ideas and views. Finally, occurrence communication is associated with developing effective communication methods and structure. Perumal and Abu Bakar (2011) emphasised the importance of establishing the proper standardisation of communication in an organisation, and described how it facilitates individuals' communication activities and understanding of what is happening during the project's lifecycle. Developing effective structure and standard instruments of communication provides a superior management system, which leads to the effective completion of a project. This should include an organisation's managerial and functional levels and all stakeholders involved in the project, as well as to consider their processes and technologies needed. Document management and structure also play a crucial role in the project communication process; the proper method adopted can minimise waste of time and reduce misunderstanding and conflict. The following dimensions are associated with good communication practices that enhance the communication process in all construction project phases:

- **Communication Strategies:** this dimension concerns the developing project communication structure, which all parties involved should understand and act upon. It includes clarification of how numerous participants will be contacted throughout the project. A well-defined system of communication is what project managers need to facilitate management practices and avoid any misconduct and misunderstanding, which significantly increases the potential of success.
- **Communication Flow and Instruments:** this relates to the communication structure and its associated information flow; what direction of information transmission will be followed in communication activities, downwards, upwards, or horizontal. Each has its advantages and disadvantages, and project managers should identify which methods are appropriate for different situations. Communication that flows from upper managerial levels and managers to a project team is downward communication. In upward communication, information is prepared by employees and individuals for upper management level. Horizontal communication occurs between different areas at the same level. This dimension also concerns various types of project communication instruments. Project managers should identify different tools that will be utilised throughout the project and be introduced and carefully explained to all participants.
- **Communication Documents:** effective system of document storage and retrieval should be in place. A large-scale construction project has a huge number of

documents and, in most cases, these should be available and easy to access at any time during all project phases. Proper storage of project documents is significant for future organisation business. The standardisation of document style and structure may produce better communication performance between numerous parties in a temporary working environment.

6.6.7 Theme G – Stakeholder Development Strategy

Human capital plays a significant role in an effective organisational environment, which leads to a firm's success. Training and development practices represent a significant strategy in achieving greater individuals' performance and various project goals. On a construction project level, modifying or developing peoples' work-related knowledge (project agreements, health and safety roles, processes and new project regulations), attitudes, skills, abilities and motivations can lead to a high level of effective performance. Dainty *et al.* (2000) stated that development strategies within large construction firms should involve all managerial and operational levels including professionals, managers, project teams and other individuals involved in a project. Through implementing integrated development programmes, individuals are able to fulfil their own needs and expectations and organisations meet their management objectives. In order to fulfil project team expectations in construction, all team members from various project stakeholders should be involved in these arrangements. They require careful management, motivation and strategic development plans in order to contribute positively to project performance. In this regard, employees' training and motivation practices at all organisational levels are not only considered important for achieving goals, but also play a crucial role in maintaining an organisation's competitiveness in a business global arena (Tabassi, *et al.* 2011). However, it has been argued that the temporary nature of construction project teams, the dynamic changes of resourcing needs and requirements and the distinct skills required from professionals and managers throughout construction processes prevent the effective implementation of such strategies. Therefore, an organisation and its various project managers and leaders have to align development strategies with organisational policies, which initially maximise a firm's integration, commitment and motivation of its employees, and the quality and flexibility of its activities. Raiden *et al.* (2009) stated that the human resource management unit should play a fundamental role in providing required training and development approaches for people in a

construction project through sufficient understanding of project requirements and individuals' needs. Thus, a powerful development system of human resource is a vital strategy for all construction organisations. A significant focus in various studies has been on the important role of strategic human resource management in fostering high levels of individual knowledge, competence, motivation and challenge, so that they can contribute meaningfully and creatively to the success of various initiatives that are related to the high performance of organisations (Chow and Liu, 2009; Dainty *et al.*, 2000; Tabassi and Abu Baker, 2009; Tabassi *et al.*, 2011). In an investigation of construction-related dimensions, the following essential development factors can be proposed:

- **Development Level:** an organisation's human resource should directly work with the project management team to identify a project's requirements in terms of individual and group learning and development opportunities that support business strategies as well as project team and individual performance. Various project participants should be considered, whether internal or external bodies, as they belong to a single team with a common objective to achieve. Therefore, these different activities will significantly enhance overall project performance.
- **Training Method:** different methods of training and development programmes should be implemented, which include both on-the-job and off-the-job training, in order to ensure the best performance of project activities. The former deals with project skills and knowledge requirements and updated regulations, processes and procedures, while the latter involves the use of lectures, presentations, seminars and exercises to develop various technical, personal and problem solving skills. The major focus of individual and group learning experiences is on individual abilities, skills, attitudes, behaviours and knowledge. Thus, it can be related to the specific project or personal development practices that leverage employee competence levels and benefit the organisation in the future.
- **Motivation:** the level of individual willingness to contribute towards a project is fundamental to success. Employees' motivation can be increased through various methods. Project managers have to understand their project environment and how to satisfy individual needs, and, accordingly, develop proper motivational strategies which boost people's energy. Individuals' involvement, sharing relevant project information and team belonging factors have direct impact on performance improvement in a project. Indeed, when employees feel that they are a crucial part

of an organisation and their input is important in making decisions and leading to a firm's success, high encouragement levels will result. Project managers should also offer various forms of recognition and rewards in exchange for employees' superior performance and outcomes, in order to encourage such attitudes. This can be applied to both individuals and project teams.

6.7 Summary

The novel research strategic framework, as shown in Figure 6.9, has developed through several phases, by integrating various theories and concepts associated with project strategies, SHRM and various efficiency management attributes. The theoretical rationale for its different phases was inspired and guided by SM thinking and continuous improvement philosophy. The researcher initiated the framework development process by building adequate knowledge and obtaining insight into airport construction business environment and its related issues in terms of management practices. Subsequently, associated problems were identified and analysed, in turn outlining the specific direction of the research framework. This was to achieve the desired framework that offers possible solutions for an airport operator's project managers to implement, in order to enhance their performance when managing and controlling their construction projects. A detailed and comprehensive examination of interdisciplinary literature revealed seven drivers of success, which are applicable to airport construction context. Their sub-modules represent the independent variables, which may influence the effective and efficient performance and completion of airport construction projects, the dependent variables. The influence of high management performance is moderated by the achievement of several project characteristics, the intervening variables.

Further examination of the research framework can be achieved through the analysis of several case studies, exploring different airport project management experiences, in the data analysis chapter, in order to refine, modify or restructure its instruments and design the theoretical framework. These case studies concern a number of different airport ownership structures. Therefore, the effects of various ownership forms on improving airport organisations' effectiveness, when managing and controlling airport construction projects,

will also be investigated. Accordingly, the researcher can elaborate a typology of the different experiences to which the knowledge might apply.

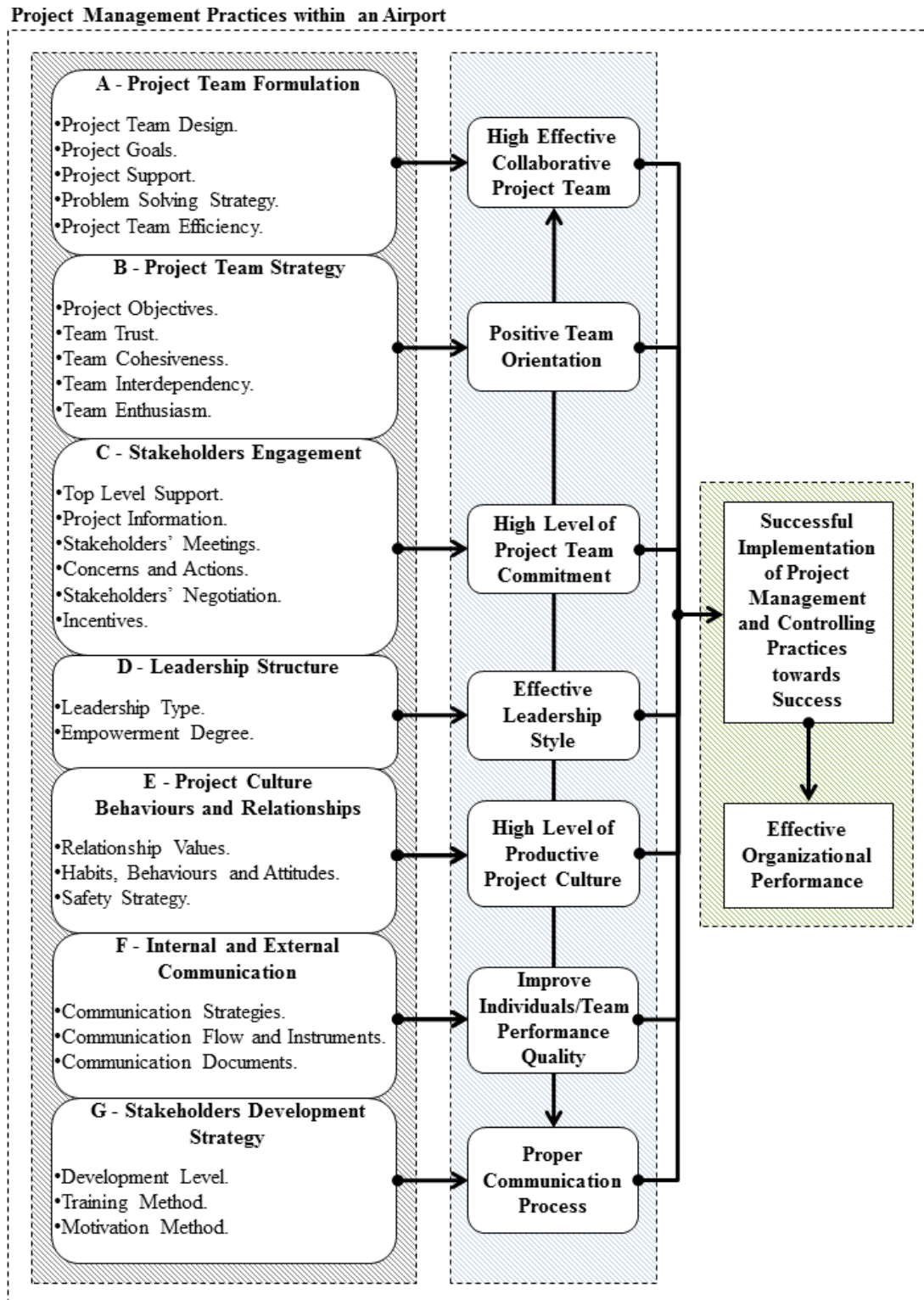


Figure 6.9: Research Proposed Theoretical Framework

7. CHAPTER SEVEN – RESEARCH METHODOLOGY AND METHOD

7.1 Introduction

Different points of view and opinions may be raised about a specific aspect and lead to various questions, so disputes appear. These different opinions need to be tested in order to distinguish which is correct and settle arguments about the nature of the context. This can be achieved by following a specific philosophy and a systematic investigation process. An effective philosophy, therefore, is needed to formulate an investigation design and method, which support gathering relevant and quality information and, ultimately, developing a solid foundation for seeking possible answers. In research context, finding answers to specific questions is the main and mutual goal for different researchers. Furthermore, distinct purposes are the rationale for conducting these different systematic investigations (Burns, 2000).

However, what is the meaning of the term research? According to Naoum (2013: 2), research can be defined as “careful search or inquiry; endeavour to discover new or collect old facts etc. by scientific study of a subject; course of critical investigation.” Research aim or objective identifies the focus of certain aspects of a topic and forms and organises a research process which involves answering particular questions, solving specific issues or testing hypotheses. Accordingly, the research process is composed of enquiry, study or investigation dimensions, which must be carefully conducted in a critical and/or scientific manner. Indeed, in practice, research is a continuous collaborative process that has no finish line, and in which a researcher develops the knowledge acquired from others and provides a new path for further investigations which will never be completed (Burns, 2000).

Bouma (2000) stated that understanding a process involves a series of linked activities guided by various principles, philosophies, methods and rules, which create confident statements about observations of a specific body of knowledge. In this context, he suggested that the researcher can start the research process by clarifying the main issue, developing research question/s and selecting a proper research method. Following this, the researcher moves to a new stage where gathering information about the research question and collecting related evidence take place. Such evidence will then be aligned to the research question and, accordingly, appropriate conclusions can be drawn before suggesting areas of further research and acknowledging research limitations. Indeed, researchers have established numerous

philosophies for developing research knowledge within a particular field and going through associated phases. Consequently, in social research literature, a considerable debate has emerged regarding which research philosophy and methodology are the most appropriate for research problems (Love *et al.*, 2002; May, 2011; Veal, 2005; Yin, 2003). Saunders *et al.* (2009) offered the research onion, as illustrated in Figure 7.1, as a systematic research philosophical approach, which can lead to an effective understanding of research philosophy, methodology and method. Each understanding level has a fundamental part to play in developing the undertaken research. Research philosophy is about the type of philosophy that deals with knowledge. The process of examining methodology involves the practice of knowledge and clarifies the research design and strategy, as regards how the researcher will achieve the desired knowledge. Research method clarifies the researcher's choice of knowledge collation technique/s and analysis procedures over the research project.

The research onion and its various layers will guide the development of the research methodology and method chapter. This chapter considers the numerous dimensions of the research project and its design process as well as the main structure and procedures needed to achieve the research objectives. It will first provide an overview of research philosophical thinking before investigating different research approaches and strategies before justifying them within this research context. Following this, a rational discussion of research data collection and analysis methods and related aspects will be presented.

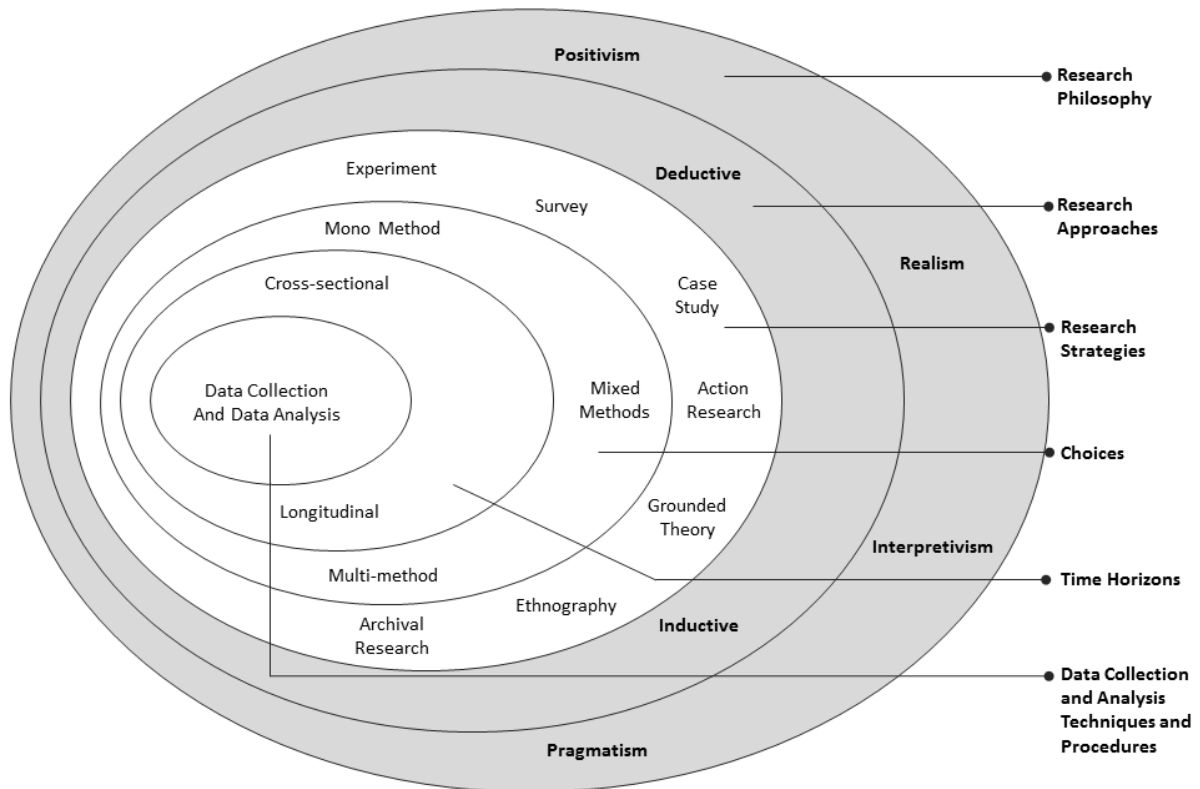


Figure 7.1: The Research Onion (Saunders *et al.*, 2009: 108)

7.2 Research Philosophy

The type of research question/investigation is the most important consideration for distinguishing between various research philosophies (Yin, 2003). Saunders *et al.* (2009) argued that the research philosophy adopted by a researcher is influenced by various considerations. However, the main influence concerns the researchers' views of the relationship between a particular knowledge area and its development process. Tashakkori and Teddlie (1998) suggested that what matters most for an investigation affects those different views, as the main concern for some researchers might be an organisation's management objectives, while for others it is workers' or managers' feelings, behaviours and attitudes. The former represents the social entities' position that exists in an organisation, while the latter relates to the created social phenomena following the actions of social actors. These two distinct aspects reflect the nature of reality and researchers' beliefs about the way the world works, and which is recognised as ontology. However, according to Tashakkori and Teddlie (1998), not only one choice is available for researchers; instead, researchers' philosophical thinking should be in the form of a continuum. Hence, researchers' views

should be based on what interests them and adding value to their studies throughout the entire research journey.

A collection of strategic philosophies and theories forms the nature of research commitments, which influences researchers' decisions as regards the development of research design, selection of research methods and data collection and analysis procedures. These different sets of beliefs are strategic guidance for the researcher to understand the various dimensions of research philosophies and to acquire the required knowledge. This is because they are closely associated with the main research question, that is, how the researcher questions research objectives and addresses and determines research findings type. In this respect, the major way of thinking and the most fundamental philosophical distinction instrument at the early stages of research is acknowledged through the study of epistemology. Collis and Hussey (2003: 48) noted that “epistemology is concerned with the study of knowledge and what we accept as being valid knowledge.” Various schools of epistemology have emerged, which mainly analyse the nature of knowledge and justify researchers' beliefs regarding truth (Bhaskar, 1989 Burrell and Morgan, 1979). In the context of management research, Saunders *et al.* (2009) and Easterby-Smith *et al.* (2002) stated that two main epistemological approaches can inform the research process. Researchers who try to fill the knowledge gap and rely on resources adopt positivist philosophy, whereas the problem solving researchers who focus on feelings and behaviours embrace the interpretivist philosophy. The key features and differences between the schools of thought are shown in Table 7.1.

Positivism Philosophy

According to Saunders *et al.* (2009), in positivist research, researchers are the process controllers, but external to the research site. They believe that reality exists independently of the phenomena being observed. In relation to reality, positivists consider that there is a single objective reality in human minds regardless of the researchers' beliefs or perspectives.

However, a particular phenomenon will lead the researcher to produce credible data; in this case, the data collection process is based on an existing theory that supports the researcher to develop study hypotheses. These hypotheses will then be evaluated and confirmed through testing procedures, in order to develop further theory that may be evaluated in further study. It has been argued that that positivist philosophy is mostly associated with objective

knowledge and uses the methodology of natural science. Its researchers originate knowledge from experiments and surveys and are guided by the quantitative research methodology approach, which will be considered in Section 7.3 (Creswell, 2009 and Easterby-Smith *et al.*, 2002). Statistical or mathematical techniques are the common data analysis method used by positivist researchers.

Interpretivism/Social Constructionism Philosophy

Within interpretivist research, researchers are part of what is being studied. They believe in the importance of humans as they are the main drivers of science. Reality here is multiple as it is related to the nature of research context. Thus, observers increase their understanding of a situation or context through the social world and their point of view, and interpretation process is based on a researcher's set of meanings (Saunders *et al.*, 2009). Accordingly, knowledge is socially constructed; the researcher builds research subjective knowledge, rather than knowledge which is objectively determined, through the use of interviews and observations. The researcher is also guided by qualitative research methodology. Crucial to this philosophy is that the researcher should follow the analysis procedures of conversation and text in order to generate hypotheses and draw research conclusions specific to the research context (Easterby-Smith *et al.*, 2002).

Table 7.1: *Key Features of Positivism and Social Constructionism* (Easterby-Smith *et al.*, 2002: 30)

	Positivism	Interpretivism/ Social Constructionism
<i>The observer</i>	Must be independent	Is part of what is being observed
<i>Human interests</i>	Should be irrelevant	Are the main drivers of science
<i>Explanations</i>	Must demonstrate causality	Aim to increase general understanding of situation
<i>Research progress thought</i>	Hypotheses and deductions	Gathering rich data from which ideas are induced
<i>Concepts</i>	Need to be operationalized so that they can be measured	Should incorporate stakeholder perspectives
<i>Units of analysis</i>	Should be reduced to simplest terms	May include the complexity of 'whole' situations
<i>Generalization through</i>	Statistical probability	Theoretical abstractions
<i>Sampling requires</i>	Large numbers selected randomly	Small numbers of cases chosen for specific reasons

7.2.1 The Selection of Research Philosophy

This research project aims to develop and confirm, empirically, a theoretically strategic framework, which models various strategies in order to enhance a particular context associated with specific problems. It also investigates how the proposed framework affects the context in terms of the actions and interactions of its individuals and processes, in order to expand existing knowledge, and generate new knowledge or applications for the issues highlighted. Hence, this study is associated with the process of inquiry, study and investigation related to an organised body of knowledge that is required by either law or theory; these are pattern observation and systematic clarifications of behaviours or phenomenon. According to Bhattacharjee (2012), such a process is acknowledged as science, and can be divided into two distinct knowledge areas: natural science and social science. The former refers to natural phenomenon, including sciences associated with physics, earth, life, chemistry and astronomy. The latter is concerned with individuals and people within groups, organisations and societies including their behaviours and attitudes. Thus, the nature of research is categorised under social scientific research. This research type operates at two

levels defined by Burns (2000) as theoretical and empirical. The theoretical level focuses on developing concepts with regard to a social or natural phenomenon and exploring the relationships between these concepts. Empirical level involves the process of testing developed theoretical concepts, including their relationships, in order to achieve better theories. Hence, social scientific research involves an iterative technique between observations and developed theories, in which both are crucial components of this research type.

Within social science research, in order to acquire knowledge about a subject in a field, the actors' process of meanings and interpretations of selected subjects must be followed. From this knowledge perspective, a new epistemological approach under the same principle of positivism was developed, which allowed more interaction between the social science researcher and study participants. It was described as post-positivism philosophy, aiming to produce knowledge about social patterns that is objective and can be generalised (Willis, 2007). According to Corman and Poole (2000), post-positivism is mainly a range of perspectives on positivism, in which there is not a single social reality and judgement cannot be only based on data; instead, it advocates the use of social constructions process where the researcher needs to discover the exact nature of reality and how this actually works. In line with data meaning context, Willis (2007) stated that post-positivist researchers develop specific theories or hypotheses about a chosen research area, prior to conducting their studies, which can be modified and validated through statistical analysis.

However, research proposed strategic framework has been developed through integrating exiting theories related to the strategic management body of knowledge, which aims to generate the rules and guidelines for selected contexts that need to be followed in order to achieve effective management practice. With regard to the research framework and associated knowledge, the researcher enters a specific world to gather data and understand the context from the actors' point of view, in order to confirm and verify the developed framework. The researcher also aims to understand different situations in terms of the relation between objective aspects of management and specific operational functions. Hence, this research project contains characteristics of both interpretivism and post-positivism philosophy, in particular, from the perspective of acquiring research knowledge, developing

theories and analysing the data, which will be considered in the following section.

7.3 Research Approach

According to Walliman (2006), within the research context, there are two ways of acquiring knowledge or understanding problems, namely, empiricism and rationalism. These different ways of acquiring knowledge can be achieved by two types of research, known as methods of reasoning; these are inductive and deductive, as shown in Figure 7.2, and they follow a top-down and bottom-up directions, which are in opposite structural format. Bhattacharjee (2012) described the former approach of research as theory-building, in which researchers draw conclusions from evidence, while the latter as theory-testing, where finding evidence is the main concern for a researcher to support or reject conclusions. However, the adoption of deductive approach is not just to test a pattern or theory, but the researcher can also extend, adjust, improve and refine the developed theory.

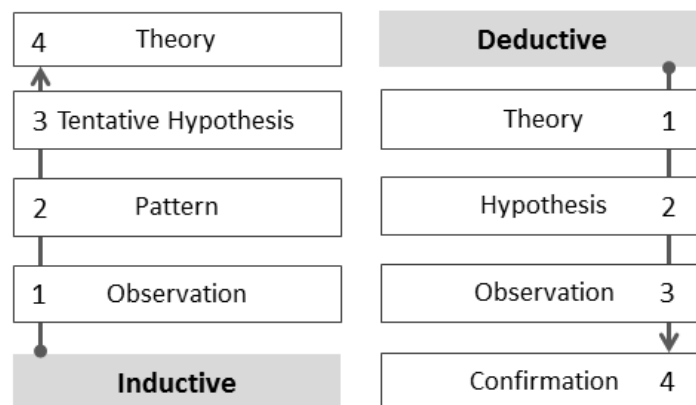


Figure 7.2: Inductive and Deductive Reasoning (Walliman, 2006)

7.3.1 Inductive Reasoning

Inductive reasoning approach begins from particular observations and measures and moves towards wider theories and generalisation. Thus, from the observed data the researcher can form theoretical patterns and concepts (Bhattacharjee, 2012). In this approach uncertainty is highly expected and its outcome is premise-based. Inductive approach was defined by Horn (2009: 108) as:

Generalizations are made from the individual instances. In research terms, this involves observing instances of something, looking for a pattern in the instances, building a tentative theory, and then testing that general theory to provide generalizations about behaviour.

7.3.2 Deductive Reasoning

In contrast, a researcher begins the deductive reasoning approach from the top, where general information is, and then develops theories of a particular interest. Following this, from the developed theories the researcher narrows down the research focus and produces more specific hypotheses. During the observation stage the researcher tests research hypotheses and moves towards confirming, adjusting or rejecting the theories prior to generating more specific conclusions. Thus, by using new empirical data the researcher can test different patterns and concepts generated from the developed theory (Bhattacharjee, 2012). In this approach, the conclusion is based on logic and the overall approach generally adopted to test hypotheses. Horn (2009: 108) defined the deductive approach as:

Deduction starts with a theory, focuses down to a hypothesis about a specific matters, then makes observations to test the hypothesis, finally confirming or refuting the hypothesis.

7.3.3 Selection of Research Approach

The research project aims to develop and test, modify and revise, a strategic model of organisational effectiveness under the current conditions of various management practices associated with airport construction projects under different modes of governance structures. The investigation focuses on several airport operators, in particular, their construction project management practices. These operators work under different modes of ownership structures, namely, government department, public cooperation, joint public-private venture and private ownership.

The researcher followed an appropriate method in order to satisfy the research aim through accomplishment of the research objectives. There were various stages to obtain the research data. This was initiated by observing and investigating the construction industry in terms of its basic knowledge and practices that relate to strategic management and human resource management. In order to achieve this effectively and efficiently, an investigation of SM and SHRM aspects was conducted. The researcher then narrowed the focus to airport infrastructure, particularly, its construction projects, and identified its development needs in terms of both aspects and associated project management practices. In addition, different concepts of management and development strategies were investigated, in order to understand sufficiently the main features and techniques of improvement. This was done within a research context to develop effectively the proposed theoretical framework and enable the researcher to achieve the research goal. The framework would ultimately be tested and refined according to a series of investigation processes within the selected cases in order to draw study conclusions.

Thus, the researcher sought to find and collect evidence supporting or disproving the proposed framework, which was developed as a conclusion of an adequate investigation process. The dominant approach adopted during the entire study was deductive reasoning. However, the research contains inductive elements, such as research hypothesis or testable theory within a framework format. These distinct elements were developed inductively from observing the current condition of the construction industry and, in particular, the airport construction project business environment and related characteristics. The research hypothesis/theory could then move through the new design stage following a deductive testing process in order to be refined, adjusted or rejected in the light of study results. Hence, the research framework was inductively built and deductively tested and refined. Walliman (2006) mentioned that when a research combines inductive and deductive reasoning, this is known as a hypothetico-deductive method. He also stated that, in practice, it is difficult to be a pure inductivist or deductivist, as theoretical ideas are needed in order to know the scope of the required information and adequate knowledge to develop and generate a theory effectively.

7.4 Research Strategy

There is general agreement among academics and professionals as regards research strategy types that can be adopted when undertaking both inductive and deductive studies (Bhattacharjee, 2012; Creswell, 2009; Horn, 2009; Naoum, 2013). Qualitative and quantitative methods can be used by researchers when doing research activity. These approaches are, mainly, a solid foundation for a research designing process from initial broad assumptions to data collection and detailed methods. In practice, an additional technique can be adopted which is called mixed method (Creswell, 2009). Indeed, the main purpose of any technique is to acquire research data. However, as both names suggest, the quality of information is the main concern of qualitative method, in which understanding and interpretation of actions and experiences are highly involved. In comparison, quantitative method is concerned with quantifying data, measuring a context of various opinions or aggregating results (Bryman, 2008). Walliman (2006: 37) highlighted the key differences between the two approaches; quantitative method “relies on collecting data that is numerically based and amenable to such analytical methods as statistical correlations, often in relation to hypothesis testing”, while qualitative method “relies more on language and the interpretation of its meaning.” Furthermore, Naoum (2013) argued that theory placement in quantitative research is clearer than qualitative experience as roles and standard terminology are expected to exist. It has been noted that, in a number of qualitative researches, the placement of theory occurs at the end of the study, which can be further studied and investigated in quantitative research. In terms of the questions of each method, qualitative approach is appropriate for answering questions about problems, e.g. why and how to fix an issue, while quantitative method is suitable for answering quantity enquiries, e.g. how much and how many types of questions. The key features of each research approach are illustrated in Table 7.2.

Table 7.2: *Key Features of Quantitative and Qualitative Approaches (Naoum, 2007: 43 and Williman, 2006)*

	Quantitative	Qualitative
Orientation	Uses a deductive approach to test theories	Uses an inductive approach to generate theories
Epistemology	Is based on a positivist approach inherent in the natural sciences	It rejects positivism by relying on individual interpretation of social reality
Ontology	Objectivist in that social reality is regarded as objective fact	Constructionist, in that social reality is seen as a constantly shifting product of perception
Role	Fact-finding based on evidence or records	Attitude measurement based on opinions, views and perceptions measurement
Relationship between researcher and subject	Distance	Close
Scope of findings	Nomothetic	Idiographic
Relationship between theory/concepts and research	Testing/Confirmation	Emergent/Development
Nature of data	Hard and reliable	Rich and deep

7.4.1 Qualitative Research

Subjective explanation of social actions is the major aim of qualitative research. Therefore, qualitative research, including its questions and various processes, involves participants' setting. Data are generated from participants inductively, analyzed and built, from specific to general themes, based on a researcher's interpretation of the meaning. Creswell (2009: 4) defined qualitative research as "a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem." Qualitative method provides detailed and rich results which offer the research numerous concepts and ideas. By utilising this approach, researchers can understand people's feelings towards a specific social dimension. Naoum (2013) mentioned that qualitative research activities deal with people's experiences and descriptions, which are crucial sources of research data. The information is divided into two groups: exploratory and attitudinal.

Exploratory Research

Researchers adopt this type of approach when the amount of knowledge is limited. Furthermore, a problem should be identified and researchers need to gather clear and detailed statements about this issue. There are three rationales for conducting exploratory research: diagnosing a particular situation, discovering new ideas about a specific area and screening for possible solutions and alternatives. Exploratory research data are generated from conversations with people, what they have actually said, or in a description form of what was observed during the data collection phase.

Attitudinal Research

Researchers adopt attitudinal research when subjective evaluation of people's opinions, perceptions or views about a particular matter is needed. Indeed, the matter here can be in the form of a statement, a question, an attribute, a factor or a variable. Thus, the main purpose of attitudinal research is to measure or understand people's beliefs by asking them about their experiences.

7.4.2 Quantitative Research

Gathering quantitative data is the rationale for utilising quantitative research technique. The quantitative method emphasises the measurement of a concept through implementing statistical procedures to data that can be measured, classified and stored. These data are reliable, solid, not abstract, and, therefore, this method is used when researchers want to discover facts about particular attributes, questions or concepts (Naoum, 2013). It is a useful technique when a researcher aims to collect evidence in order to test specific theories or hypotheses through studying the relationship between various facts. Quantitative research was defined as “a means for testing objective theories by examining the relationship among variables” (Creswell, 2009: 4).

7.4.3 Selection of Research Strategy

The decision as to the appropriate style that can be adopted when undertaking research depends on the extent to which research aims and objectives can be achieved and the

suitability level of the overall journey, in particular, during the research analysis stage. Various categories are associated with information that can be gathered from either qualitative or quantitative methods. The former is divided into two categories, exploratory or attitudinal, while the latter can take an ordinal, interval, nominal or ratio form. Naoum (2013) explained that qualitative research is ‘subjective’ in nature and concerned with language and its subsequent interpretation.

Due to the nature of this study, information related to understanding and investigating various management strategies, associated with airport construction projects within different organisations, is acquired from several key construction personnel. The strategic method adopted in this study is a qualitative approach with dominant attitudinal research characteristics and some exploratory elements. Qualitative method helps the researcher in adequately investigating and understanding his area of interest and achieving the research goal. Furthermore, data gathered from participants are quantified in order to be measured following the process of qualitative evaluation of the information. In this regard, Naoum (2007: 42) stated that “the data gathered under the qualitative research can later be ‘quantified’ to some extent but a qualitative approach tends to value the data as ‘qualitative’.”

7.4.4 Limitations and Strengths of the Qualitative Approach

Qualitative method has been criticised by quantitative researchers. However, it has various strengths when well conducted. One of the major criticisms of qualitative approach is related to the issue of sufficient reliability and validity (Burns, 2000). This is, indeed, due to the subjective nature of its data and the origin of such data is a specific context. Thus, researchers face difficulties and challenges when attempting to apply conventional criteria of validity and reliability. Acceptable generalisation of events and situations cannot be applied with a high level of confidence. Qualitative research produces a high volume of data, which makes the data collection stage and the following analysis and interpretation processes time consuming. A researcher’s promise of confidentiality and anonymity may lead to some issues when evaluating, preparing and presenting findings. The viewpoints of participants and the overall research results can be more difficult and consume more time if intended to be presented in visual form.

However, due to the importance of maintaining a close relationship with research participants and data collection related activities, researchers can gain various benefits (Burns, 2000). Detailed examination of research issues can be effectively done, which enables the researcher to gain adequate understanding of a specific field of study. Various suggestions of possible relationships, processes, effects and causes in a particular setting can be presented through the description processes of qualitative data. For this reason, qualitative approach and its data collection and analysis processes offer viable alternatives, but do not provide the researcher with quick answers to the target questions. Researchers can also gain new insight into contexts by examining different forms of knowledge that may be unavailable otherwise. This feature allows researchers to develop and revise a research framework and its direction quickly as new information arises.

7.5 Data Collection Approaches

Data collection is a process designed to gather quality research data and capture evidence on the variables of a researcher's interest, which can be then translated and analysed in order to answer research questions, evaluate results and test theories and hypotheses. This stage is a crucial and critical aspect of numerous types of studies regardless of the field of study or different methods available for researchers. Accurate, appropriate and honest data collection is essential to maintain research integrity, reliability and validity. Insufficient data collection activities can lead to invalid outcomes, which significantly impact the entire research (Burns, 2000). The research process should follow essential steps to initiate the data collection phase. Bouma (2000) argued that the researcher has to complete certain preparatory steps to proceed with research data collection effectively and efficiently; these are identify the research focus, decide on the major concepts involved, select the related variables, develop the research design, identify the research sampling procedure and determine the data collection tools and techniques. According to Naoum (2007), two factors influence the researcher when deciding the appropriate method of data collection: the research and the nature of its investigation and the type and availability of the desired data. Fieldwork and desk study are the available approaches to gather information; the former provides primary research data, whereas the latter represents secondary data research. Research data collection mechanism and design and adopted instruments are key to realising relevant and effective results.

7.5.1 Primary Data

In the research domain, this method is recognised as primary because the researcher is primarily responsible for obtaining information, and also due to the close distance between the data and the researcher. Primary data in ‘fieldwork research’ also refer to various primary methods and activities of data collection, but are not related to people in terms of their daily lives. In line with this, Naoum (2007: 48) described primary data as that “obtained first hand.” He offered three different practical strategies, namely, the survey approach, the case study approach and the action research/problem-solving approach, which suit different researches and can be adopted in a built and environment setting, in particular the construction industry and project management studies. Indeed, it has to be noted that there are other approaches to primary data collection, which require long periods of time and are associated with a high level of detailed evidence, e.g. observational and experimental.

7.5.2 Secondary Data

Secondary data approach is also adopted in research to collect data. This uses the desk study method, which deals with different sources of information and involves data that are already recorded and interpreted in the form of statistical or descriptive data format. Secondary data are collected by researchers and professionals for the purpose of previous studies. Walliman (2006) stated that by utilising this approach, researchers can pursue their research interest, which differs from that of existing studies. Numerous sources are available for researchers to obtain secondary data, ranging from text books, journal articles and papers to audio and visual forms, e.g. movies, TV and numerous non-written sources. The advantages of adopting the secondary data approach are offered by Naoum (2007) as shown in Table 7.3.

Table 7.3: *Advantages of Secondary Data Approach (Naoum, 2007)*

Secondary Data	
Time	Access to research data can be secured quickly whether from the internet database or libraries various sources
Cost	Conducting a secondary research investigation is much less expensive than the primary research; it is not expensive even when there are costs associated with collecting the secondary data.
Quality	High quality research information can be obtained from secondary data. It provides also comparative tools that support the researcher while comparing new data to existing knowledge in order to examine new trends or differences

7.6 Techniques of Data Collection

Following a decision on the type of data, qualitative and/or quantitative, that should be obtained to satisfy the research aim and objective, and the research strategy to be adopted, whether survey, case study, problem-solving and/or archival data, the researcher has to select the appropriate technique and procedure for collecting primary research data (Burns, 2000). In fact, there is no obvious agreement on the approaches available for collecting either qualitative or quantitative data (Burns, 2000; Creswell, 2009; Naoum, 2007). Naoum (2007) described two main research techniques that can be utilised to collect research data from participants: questionnaires and interviews. Creswell (2009) offered a survey approach through developing the questionnaire design for quantitative research purposes, and observations, interviews, audio-visual materials and published documents procedures for qualitative type research. However, all techniques allow the researcher to obtain systematically valuable data in a specific study, whether for individuals, groups of people, organisations, events, objects or systems. Based on the method design, context and nature of the required data, various data collection techniques can be applied for either qualitative or quantitative research data. The following sections illustrate different data collection procedures.

7.6.1 Observations

This technique involves taking notes on the activities and behaviours of objects, groups,

events or individuals at the research site (Creswell, 2009). In these field notes the researcher selects, watches and records characteristics and behaviours. The observer can participate in the event and ask unstructured or semi-structured questions, or just watch and take notes without any sort of participation. Table 7.4 illustrates the advantages and limitations of observation technique.

Table 7.4: *Advantages and Limitations of Observation Technique (Creswell, 2009: 179)*

Observation Technique	
Advantages	Limitations
Researcher has a first-hand experience with participant	Researcher may be seen as intrusive
Researcher can record information as it occurs	Private information may be observed that researcher cannot report
Unusual aspects can be noticed during observation	Researcher may not have good attending and observing skills
Useful in exploring topics that may be uncomfortable for participants to discuss	Certain participants (e.g., children) may present special problems in gaining rapport

7.6.2 Interviews

Arksey and Knight (2011) suggested that interview is not a single research method; instead, it is a combination of research approaches with a common characteristic, which is conversation between the researcher and a participant. A standard definition of interview was offered by Berg (2009: 101); it is “a conversation with a purpose. Specially, the purpose is to gather information.” Therefore, interview is a data collection method that involves oral communication, in question format, with individuals or group participants, to collect factual information and opinions. However, answers generated from an interview can be tape-recorded or written down whether during the interview or following its completion (Naoum, 2007). Indeed, interview activity cannot be organised and performed without the researcher’s acknowledgment of the interview structure and its major design format, which will determine the degree of flexibility in an interview. In this regard, some research professionals offer only two types – formal and informal structures (Fitzgerald and Cox, 2002) – while others mention three structural formats of interview, namely, structured, semi-structured and unstructured (Leedy and Ormrod, 2004; Naoum, 2007). Berg (2009) described interview

research structures as standardised, semi-standardised or unstandardised; the researcher can adopt one form or a combination, and the research requirements guide the researcher's decisions. However, before discussing the different types of interviews the use of interview approaches is illustrated in Table 7.5.

Table 7.5: Features of Interview Approach (Naoum, 2007: 61)

Interview features	
Identity of respondents	Known
Interaction between interviewer and respondent	Close
Time involving the researcher	Long time to go through the interview
Cost	High
Sample	Small
Quality of information	Deep and detailed
Skill and experience	The interviewer needs to have the skill to ask questions and, if necessary, to probe
Control of the process	High
Flexibility	Allows great flexibility to reword questions and clarify terms that are not clear
Analysis of the results	Difficult and become complicated in the unstructured interviews
Interviewer bias	The flexibility of interviews allows for bias. Sometimes the non-verbal communication or behaviour of the interviewee may mislead the interviewer to incorrect judgment

Unstandardised Interview

Open-ended or open questions format is associated with this type of interview, in which the researcher must develop a clear structure and effective plan, to guide the discussion process, with regard to interview focus, in order to achieve the desired goal. Indeed, this form requires a very skillful interviewing approach due to highly unpredictable discussions. Interviewers usually adopt an unstructured interview approach when undertaking qualitative research. The gathered information from each participant is not expected to be the same. Thus, a purely exploratory exercise is highly associated with the data analysis phase to find

correlations between various responses. Since the flow of interviews differs and discussion may follow unexpected direction, it is highly recommended for the researcher to tape interviews so to focus and lead the discussion and interact with people. Unstructured interview is a useful method for acquiring an adequate understanding of an ambiguous setting, culture or people's experiences. It also allows development of more structured interview formats or guides within a specific context. However, it should not be adopted when the research aim is to generalise a set of outcomes (Berg, 2009).

Semi-standardised Interview

Semi-structured interview is often utilised to gather qualitative research data from participants regarding defined subjects. This form of interview is closely associated with high cost and time consumption, as well as more formal characteristics than unstructured interview method. Interviewers use the open- and close-ended questions format, but a specific order of questions is not essential to be followed. Communication skills and the interpersonal skills of the researcher are important factors to generate the required information effectively. The interviewer has to listen attentively to the interviewees' responses in order to understand their points of view, to communicate properly and to discover as much as possible specific information of the research subject area. Such a technique relates to a situation that has been investigated and analysed previously, before starting the interview phase. Accordingly, participant experience is investigated. To accomplish this effectively, an interview guide should be developed, which specifies and integrates the research hypothesis topics. Indeed, in this interview approach participants tend to talk about an experience more freely and in detail. In addition, complex issues are easy to clarify and discuss due to the high flexibility of a structured interview. However, the nature of different interviews associated with the same study is different in terms of questions asked and their order. Therefore, during the interview, an interviewer's ability to think about questions is key to the success of this technique. This leads to difficulty when repeating the interview with other participants as different questions might be asked, which makes qualitative data not easy to analyse, in terms of determining whether the information is relevant to the research subject. Finding a way to develop trust between parties is a crucial factor to ensure information validity (Berg, 2009).

Standardised Interview

A list of predetermined questions and two parties, the researcher and interviewee, form this type of interview. All applicants involved in a structured interview process must receive the same questions in terms of order and wording format, which facilitates repeating the process for the researcher and makes such a method easy to standardise. Moreover, the researcher is able to clarify, explain and phrase for the respondent any ambiguous question, but its meaning and context should be similar to each participant. During an interview the researcher should have full control of interview procedure and maintain the flow as planned. The interviewer can initiate the interview with an open question before moving to closed questions. However, a structured interview provides the researcher with respondents' level of understanding about a particular object, event, problem, system or topic. It clarifies in-depth data as the interviewer can explore participants' feelings with regard to specific aspects. These data represent reliable sources of quantitative research. However, in order to gain useful information of high quality, questions asked must be effectively prepared as the researcher is not allowed to subtract or add questions. Due to the nature of questions design, even if the researcher used some open questions, the detail of responses is more limited than in other interview forms (Berg, 2009). Berg (2009) distinguished between three types of interview according to formality level associated with each structure, as shown in Table 7.6.

Table 7.6: *Interview Types Features (Berg, 2009: 105)*

Standardized Interview	Semi-standardized Interview	Unstandardized Interview
<ul style="list-style-type: none"> • Most formally structured. • No deviations from question order. • Wording of each question asked exactly as written. • No adjusting of level of language. • No clarifications or answering of questions about the interview. • No additional questions may be added. • Similar in format to pencil-and-paper survey. 	<ul style="list-style-type: none"> • More or less structured. • Questions may be recorded during the interview. • Wording of questions flexible. • Level of language may be adjusted. • Interviewer may answer questions and make clarifications. • Interviewer may add or delete probes to interview between subsequent subjects. 	<ul style="list-style-type: none"> • Completely unstructured. • No set order to any questions. • No set wording to any questions. • Level of language may be adjusted. • Interviewer may answer questions and make clarifications. • Interviewer may add or delete questions between interviews.

However, according to Creswell (2009) and Arksey and Knight (2011), interviews can be conducted through several methods:

- In person/face-to-face interviews.
- Telephone interviews.
- Focus group interviews.
- Email interviews.

7.6.3 Questionnaires

One of the most common methods for conducting descriptive and analytical surveys is the questionnaire method (Naoum, 2007). It is often used to determine people's feelings, opinions, experiences, attitudes, facts and views regarding a particular event. Questions of how much, how many, what, where and who are answered to meet research information needs regarding a specific topic concern. These questions are organised in either a closed- or open-ended format and seek 'yes' or 'no' responses or ask participants to rank the importance of various factors. The closed-ended question technique is less complicated and easier than open-ended in terms of data interpretation and analysis, while the open-ended type is associated with free responses and provides more depth information. Sapsford and Jupp (2008) stated that capturing participants' interests is a crucial factor for conducting an effective questionnaire, as it is associated with low response rates. However, the following are different factors that can affect questionnaire response rates:

- Questionnaire length.
- Complexity level of questions.
- Professionalism and reputation level of organisation/individuals involved in the study.
- Questionnaire design and quality.
- Time of the year in which nominated participants received the questionnaire.

Questionnaire technique is an effective and fast method for data collection, if the researcher designs well the questions and properly considers all previous elements. The researcher, in a short period of time, can involve a large number of people in the research study and obtain large amounts of information in a cost effective way. A high level of uniformity and

standardisation is possible in questionnaires, as all the respondents answer the same set of questions structured in exactly the same format. However, based on their interpretation of questions, participants may respond differently, so a high level of subjectivity is associated with the questionnaire technique. Understanding respondents' motivational factors is not easy when utilising questionnaires, which may affect response validity. This means the researcher has no control over respondents, so there is no guarantee that specific individuals or the right people within an organisation will complete the questionnaire or even give responses at all.

7.6.4 Documents

This approach of data collection deals with public and private published documents. Public documents are newspapers, magazines, reports and minutes of meetings, while private documents are official letters, journals articles and diaries (Creswell, 2009). It enables the researcher to build adequately the required knowledge about the research topic and to understand the research participants' language. Documents are a significant source of information available in the majority of study fields, which can be accessed when convenient for the researcher. However, some information in sensitive research areas is not available for public or private access, which may affect a researcher's project. To adopt an effective documents approach, the researcher should ensure the authenticity and accuracy of research documents.

7.6.5 Audio-Visual Materials

In this technique, the researcher develops a scenario of a specific topic for the selected participants. This scenario is in a visual form, e.g. pictures, videotapes, films or art objects that are prepared for participant to observe (Creswell, 2009). The researcher asks participants to give their interpretation of what is happening in the scenario. Their responses provide the researcher with knowledge and perceptions for the case study. People can share their reality by becoming involved in this process, whereby their attention is captured visually. However, the context of visual materials might be inaccessible in a public or private setting. The researcher should be careful when selecting visual materials as they can be also difficult to understand and interpret.

7.7 Selection of Research Data Collection Approach and Technique

Several factors provide researchers with an idea as to which technique best suits their primary and secondary data collection: adequate and clear knowledge regarding the type of information needed in a research project, and main research purpose and aim as well as the nature of the research investigation and objectives (Berg, 2009). Thus, in order to develop the research proposed framework, which aims to enhance managing and controlling practices of airport construction projects, a secondary data approach was adopted. The researcher acquired information following a desk study technique, which involved various published sources, including text books, journal papers and visual materials. This was to understand the main research contexts and to expand the researcher's knowledge with regard to airport construction environment and related issues.

This study also aims to explore how the theoretical framework components affect the project management strategy and its various practices within the research specific context. For this reason, investigating the various management strategies associated with airport construction projects is crucial, a process of understanding based on the views and experiences of key personnel in construction. However, according to Patton (2002) and Polit and Hungler (1995), researchers should outline all the major conceptual areas of the theory/hypothesis that are relevant to the overall study, in order to visualise effectively the information needed for their studies and to develop a set of questions that are relevant to each concept under investigation. Indeed, the previous procedures of secondary data collection and, in particular, the framework development process, provided the researcher with various elements which can be considered as a solid platform when determining the nature of primary research information, and a starting point for the primary data collection phase and development of its associated questions. The researcher acquired primary data from fieldwork by conducting a semi-standardised interview approach and survey to explore the conceptual areas. Thus, two approaches of data collection were adopted in this study, primary and secondary.

7.7.1 Variables in the Use of Theory and Hypothesis

During the development process of research theories and hypotheses, various elements appeared and combined in an integrated way and formed a study theoretical framework. These elements and their various categories represented framework themes that became the main focus of the case study investigation during the research primary data collection phase. In a specific context, once a researcher identifies elements which affect other elements, independent variables, a theoretical foundation can be established and different hypotheses can be generated (Naoum, 2007). The causes and effects of different categories or values are acknowledged as variables. A variable is an element, characteristic or condition which can take on more than one value or category. Creswell (2009: 50) categorised the common types of variables in research independent, dependent and intervening.

- Independent variables: that (probably) cause, influence, or affect outcomes.
- Dependent Variables: are those that depend on the independent variables; they are the outcomes or results of the influence of the independent variables.
- Intervening or mediating variables: stand between the independent and dependent variables, and they mediate the effects of the independent variable on the dependent variable.

Figure 7.3 illustrates research theoretical framework's variables which have explained in Section 6.7.

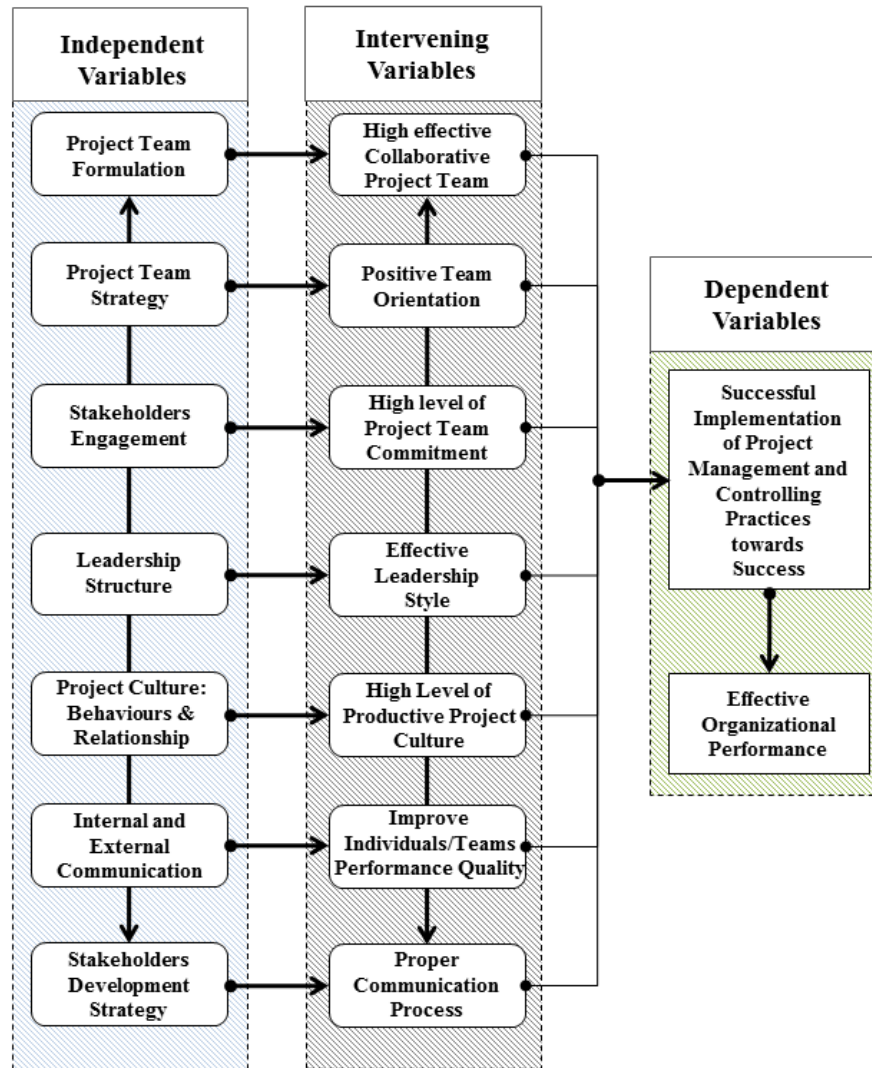


Figure 7.3: Independent, Intervening and Dependent Variables

7.7.2 Research Primary Data Collection Approach

In this study, the survey and case study approaches were selected to collect research primary data. The survey approach was applied through following a questionnaire technique for data collection, while the interview technique was adopted for the case study.

Questionnaire

The research questionnaire method was adopted in order to generate general information on each participant regarding his/her working experience within the construction sector and in

airport construction, period spent in the current role and total projects managed. This method provided the researcher with a nominal or categorical data type, which depends on classification without any quantitative value, as priority and ranking are not important (Naoum, 2007). The brief information of the researcher, study project and nature of the interview were included in the questionnaire to clarify the main research goals, and make participants familiar with the researcher and interview context, which facilitates the overall process of interview. However, questionnaires had to be completed and returned prior to conducting each interview. Indeed, this technique helped the researcher to know his interviewees and to understand their level of experience whether within the construction industry or airport business, and their current position and role. Therefore, the types of individuals involved became identified to the researcher, and the scope of questions of each participant, as the researcher was allowed to add, adjust or probe into the interview questions. Berg (2009) suggested that in order to conduct an effective interview, interviewers should know their ‘audiences’ in terms of culture, experience and background. With regard to questionnaire format, closed-ended questions were utilised to achieve the desired aim. Research Participant Pre-interview Form (see Appendix G) was designed to be completed and returned by the selected senior construction project manager prior to the interview. This form included the following:

- A brief introduction about the researcher and research project.
- Explaining the rationale for the interview.
- Providing adequate information about types of projects that should be selected and considered by the interviewee throughout the interview; that is, the best and worst case management experiences of the participant within the airport construction context.
- Anticipated interview duration.
- Consent to participate in the interview and to audio record the discussion.
- Confidentiality statement.

Interview

An interview is a considerably effective method (Taylor and Bogdan, 1998), when a researcher wants to collect information regarding specific types of questions that address certain types of characteristics, aspects or assumptions. Indeed, the actual aim and focus of

the study required significant use of the interview method of data collection, as it seeks to understand a specific environment and its various practices, in terms of the elements of the developed framework, within a particular case study. Consequently, semi-standardised interview questions were designed based on seven different themes, the conceptual areas, which underpin the research theoretical framework. Indeed, study interviews are associated with several complex factors, including the many participants involved in the overall process and the various themes and sub-themes of the research framework, which need to be investigated and offered the same stimulus along with interviewees' responses to each of them. In addition, the researcher is faced by difficulties in providing equal meaning for each theme and maintaining equal flow in all interviews. However, a systematic and structured technique had to be adopted during the overall data collection process to complete effectively the lengthy interviews and achieve the desired outcomes. Thus, in order to increase the effectiveness, minimise complexity and facilitate the interview process, the researcher developed and adopted two approaches, as explained in the following:

Interview Cards – for participants

Seven cards (see Appendix H) were designed to ensure each participant understood the theme direction and the answer required for each question. Participants received the interview cards at the beginning of the interview, particularly, a card prior to each theme question. Every card included the following elements:

- Theme name.
- Short description of the theme.
- Main theme question.

Three additional cards were also designed to acquire further information based on open general question format. The first was developed to understand the reasoning behind participants' unsuccessful experiences. Another question sought to prioritise organisations' project success factors within the airport construction business environment. Project managers' responses to these questions supported the development of the research theoretical framework in terms of refining, modifying or restructuring the framework themes and their

components. The last question, used during the framework validation process aimed to ensure that the research framework components covered all vital management factors within the research specific context and its related investigation issues, and represented participants' reality.

Interview Guide – for the researcher

This guide (see Appendix I) was developed to ensure that the researcher was able to conduct the interview efficiently and cover all required points. It comprised theme components/sub-theme elements, so the researcher could make notes during the interview regarding each point, and ask questions about unconsidered sub-themes to generate information from all interviews.

7.7.3 Research Secondary Data Collection Approach

In this study, numerous secondary data sources were utilised to build adequate knowledge and understanding of various fundamental aspects of this research project, ranging from the construction industry and strategic project management, to strategic human resource management, in relation to airport business and its construction project management domain. Data which have already been recorded and interpreted, that is, statistical or descriptive data format, were used to gather secondary research data type. Therefore, analysis and evaluation processes of numerous sources were completed, namely, academic text books, e-books, electronic and printed journal papers, articles, annual airport reports, press publications, digital airport magazine and documentary materials. Indeed, secondary data approach was very useful and considerably supported the researcher in acquiring sufficient knowledge needed in the project and developing its theoretical framework.

7.8 Sampling

Research is an organised, structured and systematic activity, seeking to find answers from a population. A population can be defined, according to Burns (2000: 83) as “an entire group of people or objects or events which all have at least one characteristic in common, and must

be defined specially and unambiguously.” In social science research, these questions need to be investigated through individuals and people within a group, organisation or community, in order to find facts and understand a specific context in terms of the defined questions. Each research has its population of interest from which the desired answers are drawn. Different research characteristics and factors provide researchers with an idea as to which type of population best suits their particular study. Leedy and Ormrod (2004) underlined that a research question and the main purpose, aim and objective are the fundamental guide for researchers in making the most appropriate selection. However, Naoum (2007) stated that once a researcher has identified the study data collection approach, decided on the data collection technique and has adequate knowledge regarding what to ask, the characteristics of the respondents should be determined. Within the research domain, taking a portion of the whole population is recognised as sampling (Burns, 2000). The researcher can then start the investigation or observation activities on the selected smaller sample and through the findings generalisation can be generated. Naoum (2007: 58) defined the term sample as “a specimen or part of a whole (population) which is drawn to show what the rest is like.”

7.8.1 Techniques of Sampling

A number of techniques are available for researchers to draw representative samples and, accordingly, make valid generalisation. Regardless of the research study type and approach Burns (2000) suggested a number of techniques: random, systematic, stratified, cluster, stage and opportunity. As regards most social scientific researches, Naoum (2007) offered two methods: random and selected sampling.

Random Sampling

Researchers adopt this technique when the detailed characteristics and traits of the sample are not fundamental elements of the investigation, e.g. participants’ background, organisation size, location and nature of work. This means that every individual from the identified population should have the same opportunity of being selected. Once the study population is identified, a list of sampling should be recognised including the main and unique characteristics, e.g. individuals’ names and addresses, of each sample, which is known as the sampling frame. Based on the sample size, manual and computer-based techniques can be

implemented to select samples.

Selected Sampling

This technique is often chosen in studies associated with the interview approach. Following the population identification stage, the process is initiated listing the names and addresses of the individuals involved; they should be homogenous and share particular characteristics. Source of information within targeted organisations, e.g. a coordinator, should be identified in order to obtain information related to participants, secure interview access and make arrangements. However, even in the selected sample approach, samples with different characteristics might be the research requirement, e.g. comparing various opinions and views of individuals/groups that have different backgrounds or experiences.

7.8.2 Sample Size

Burns (2000) stated that for generalisation purposes, and in order to minimise errors and increase accuracy associated with data results, a large sample is more appropriate. However, as Berg (2009) argued, timescale and the available budget of a study play a fundamental role in determining investigation sample size. Therefore, an approved sample should be reasonable in complexity and size, in terms of achieving the desired goals and satisfying time and financial factors. Researchers have to consider other essential factors, including the possibility of access and whether targeted individuals are likely to be available during the data collection phase.

7.8.3 Selection of Research Sampling – Technique and Size

The nature of this study and its main purpose, aims and objectives guided the researcher's decision on selecting a sampling technique to create research representative samples. As the construction business is a major research focus, a sample had to be selected from the construction industry. Additionally, construction sector type or research investigation is airport construction and, in particular, its project management practices under different airport ownership structures. As a result, the researcher chose four airport organisations that operate under two different forms of both public and private participation, as shown in Figure

7.4, namely, government department, public cooperation, joint public-private venture and private ownership. Indeed, the entire process of selection took a long time to complete, due to the numerous options available. In this regard, a decision was made, according to several factors, about the geographical location of each operator, which affects cost and time, the time consumed during the process of securing access and availability of sample size in an organisation. However, various investigations and analysis processes occurred prior to the selection stage, as identifying the mode of operation and ownership structure were key factors in making decisions. Following this, another crucial decision was made regarding participants' managerial level; selected interviewees should work at strategic, business or project organisational level. The following characteristics of the investigation samples were identified:

- The nominated individual has to be involved or working, during data collection stage, on an airport construction project/s whether new development, expansion or refurbishment.
- The selected individual should work within project level, particularly, at senior project management level.

Thus, as this study examines the strategic issues of various critical management and controlling activities, it was crucial to include senior project managers responsible for directing airport construction projects in the data collection sample. However, according to the research project timeframe and the time required to accomplish the data collection and analysis activities including processes of securing data, conducting interviews and their related activities and lengthy analysis procedures, 10 to 15 project managers were invited to participate in research data collection.

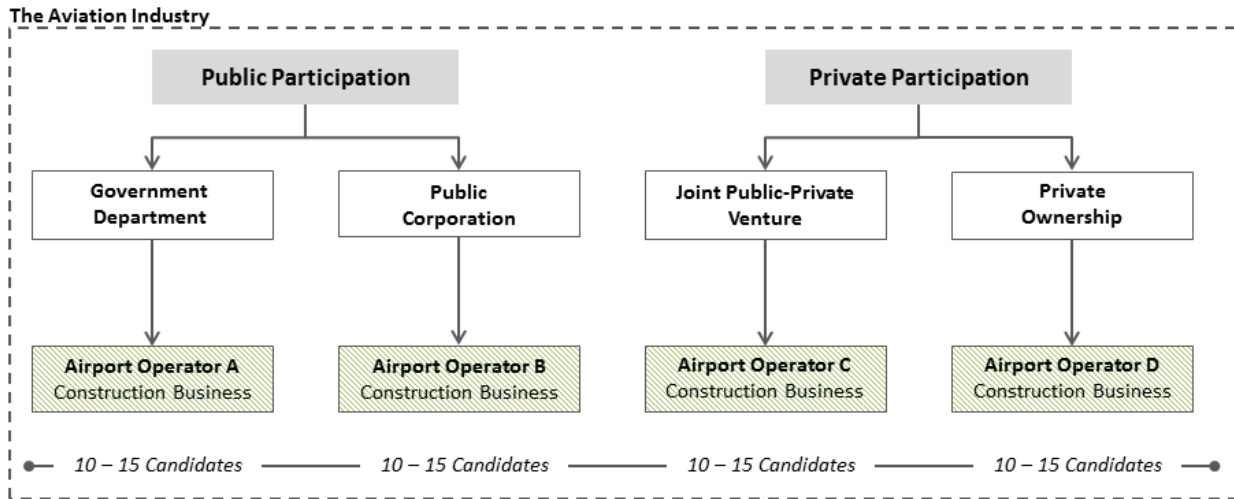


Figure 7.4: Research Sampling

Indeed, the purpose of choosing one airport operator, representing a single ownership structure, is to understand the construction project management practices of each firm, in terms of research framework themes, which enable the researcher to confirm, adjust or reject framework components and associated hypotheses. This is achieved through evaluating and analysing the various experiences of qualified and expert individuals within each targeted organisation, so similarities and dissimilarities of management practices between airport operators can be realised and, accordingly, research conclusions and recommendations drawn.

7.9 Pilot Study

A pilot study is a smaller version of the full study investigation, where pretesting of the entire data collection method takes place, including the main research instrument design, process and mechanism. Within effective research domain, it is highly advisable for researchers to conduct a pilot study before collecting research data from a research sample (Naoum, 2007). In large-scale researches, prior to the main research survey, a number of pilot studies can be conducted. Indeed, a pilot study increases the chances of study success and plays an important role in effective study design, as it provides a trial run for the research data collection instrument, whether questionnaire or interview. A pilot study involves the testing process, technique and wording of the question, identifying ambiguity and clarity of

instruction, clarifying required time to complete the process, training interviewers and increasing their confidence and familiarity with the process. Thus, researchers can identify the quality level of the proposed method and the selected instrument of data collection and make a decision whether it is complicated or appropriate. However, adopting this approach does not ensure the success of the full-scale investigation in a study project. Bell (1996, cited in Naoum 2007: 85) defined a pilot study procedure as:

Getting the bugs out of the instrument so that subjects in your main study will experience no difficulties in completing it and so that you can carry out a preliminary analysis to see whether the wording and format of questions will present any difficulties when the main data are analyzed.

Peat *et al.* (2002) suggest some activities that need to be considered while conducting a pilot study, in order to complete it effectively and gain from it research benefit:

- Researchers should ask participants for feedback, through predesigned form, to identify all associated difficulties and ambiguities with instrument technique and questions.
- Interviewers should decide whether the timescale is reasonable through recording the time taken to complete the entire process.
- Answers to each question should be assessed in terms of providing an adequate range of responses to what is required.
- Researchers should try to identify questions that are not answered as expected and then restructure or reword them.

In this study, four individuals participated in the research pilot study. All of them had previous experience of the construction industry or working currently in such an environment, particularly project management areas. Their experiences in the field ranged from 10 to 30 years, which made their comments and advice very valuable when collecting

data from the research sample. Following the completion of the pilot study process, a few alterations were made to the research data collection technique, as detailed below:

- Additional 30 minutes were added to the original interview plan.
- A major question was included in each theme card to provide clear understanding of the theme and to reduce any associated ambiguity.
- Unnecessary questions were discarded and a few others restructured.

7.10 Data Access

Data that are not available in the public domain or academic institutions require official access approval. Securing data access is a fundamental stage for researches, and this involves primary data collection activities. The term access refers to being allowed to use or collect data or materials from the sample of a population. Indeed, access to data can be achieved through different methods. Copies of existing data or samples of materials can be sent to data seekers. Researchers can download protected or confidential data online after securing data access from authorised bodies within particular firms. Access is also requested to gather or use data in person through visiting a specific place where different approaches can be adopted. In most cases, in order to gain access several requirements, agreements and terms need to be discussed and clarified between parties. Access agreements significantly differ in various studies in terms of level of formality and time consumed to secure the access and start the data collection process.

In this research project, it was crucial to secure data access from four different airport operators, who represent different forms of ownership structures, in order to satisfy the research objectives and effectively complete the study project. Consequently, following a decision on selecting the research sample, the researcher began emailing the airport organisations to obtain data access approval. Indeed, prior to this, a report of the research project was developed to be sent to each organisation. The project report illustrated the following information:

- The researcher's organisation/university name.
- The researcher and supervision team names.

- Project title and programme of study information.
- A brief overview of the research project including its purpose, aim, objectives and a clarification of the main research interest.
- A description of the participants and what is expected of them.
- Summary of the research data collection method, in particular, the interview process and related characteristics, project managers who will participate in the study and the focus of the targeted information.
- University ethical and data protection policies and procedures.

As illustrated in Figure 7.5, a representative is identified by each airport operator, who is responsible for the communication process with the researcher and coordination of all necessary procedures with nominated project managers, in terms of obtaining participation consent and scheduling interview slots.

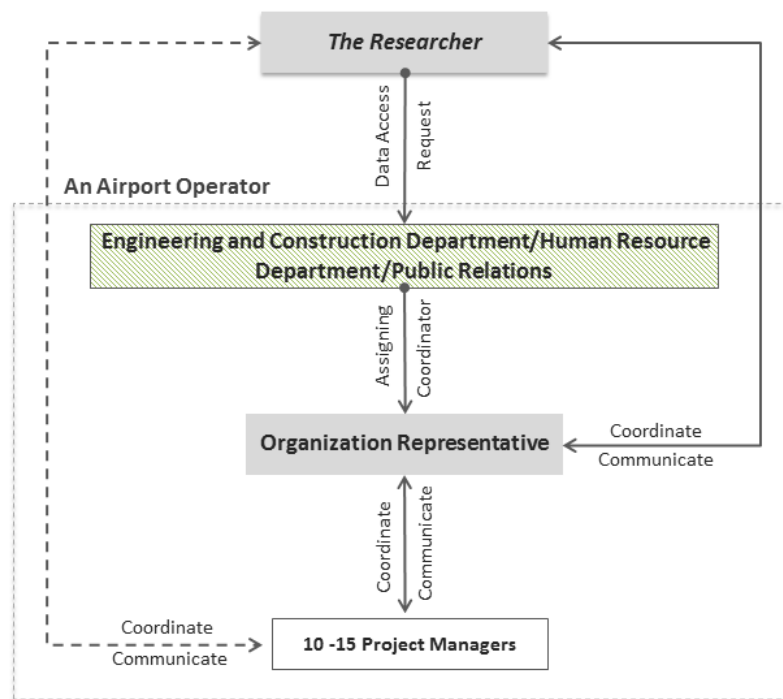


Figure 7.5: Typical Procedures of Data Access

7.11 Data Analysis

Data are collected by researchers from specific sources, an individual, event, process or object. They are also produced by those researchers themselves, in which case the data have to be identified, through analysis process, and treated individually for the purpose of a particular study context. Researchers begin the data collection stage following a decision on selecting the data required, the approach and technique of data analysis (Sapsford and Jupp, 2008).

Within this research context, a range of methods produces various types of data. The type of resulting data is determined by the selected method of data collection and technique. However, data which have been produced in this research are qualitative in nature and acquired through semi-structured format of open-ended questions. In the context of qualitative data, Miles and Huberman (1994) suggested three major philosophical methods for analysing qualitative data: phenomenology, ethnography and reflexivity or dialectics. These analytical approaches represent three different research enquiries: interpretivism, social anthropology and collaborative social research.

Phenomenology

Phenomenology refers to an individual's perception of a particular event. The focus is on how people interpret specific experiences with regard to a defined phenomenon. Phenomenologists often seek deep understanding of a transcript that is produced from data gathered (Miles and Huberman, 1994).

Ethnography

This approach involves an understanding of people and their motivations. Ethnographic method aims to analyse data from multiple sources, which are generated often through the use of a structured observation: film, videotape or audio. In such cases, anthropologists may spend weeks observing the targeted culture's behaviour within the study context, and the

researcher is then able to decide what is important and needs to be highlighted for analysis (Miles and Huberman, 1994).

Reflexivity or dialectics

In collaborative social research, two approaches are available for researchers. The main strategy involves a critical enquiry process through the use of action-related activities. Reflexivity or the process of reflection is based on a continuous reflective process as regards an individual's own perceptions, experiences and beliefs. Dialectics method seeks to understand the reality and interprets the research data through a process of argumentation between the researcher and local actors, who participate early in the study, e.g. designing the outlines of an interview or field experiment (Miles and Huberman, 1994).

In this research project, the researcher aims to understand participants' descriptions regarding the research framework themes in relation to particular phenomena. Descriptive data are obtained through conducting in-depth semi-structured interviews with senior construction project managers of different airport operators. The extensive information generated from interviews helps the researcher understand, explore and investigate practical aspects of the research context, which adequately supports the decision to refine, modify or restructure the research theoretical framework. Thus, the appropriate philosophical method of data analysis, which supports the researcher to achieve the study goals, is phenomenological approach within the field of interpretivism, which is the leading research philosophy.

However, the descriptive responses of participants are varied, but unclassified, as not all data are relevant to the main purpose of the research. Indeed, most of the qualitative data are unstructured and unclassified. Furthermore, the main purpose of the qualitative data analysis is to classify, organise and structure responses in order to describe them (Dey, 1993). Qualitative analysis, however, is not just concerned with description; instead, researchers often seek to explain, clarify, understand, interpret and predict data. This approach represents a way of analysing research data which is beyond description concept, whereby the researcher transforms the initial data description into something new. Bohm (1983: 125)

defined analysis process as “a process of resolving data into its constituent components, to reveal its characteristic elements and structure.” Thus, as shown in Figure 7.6, without applying the description and classification process of qualitative data, the initial analysis phase cannot be achieved, which builds a solid foundation for further description enabling researchers to obtain new insight into the research data, create concepts and make connections.

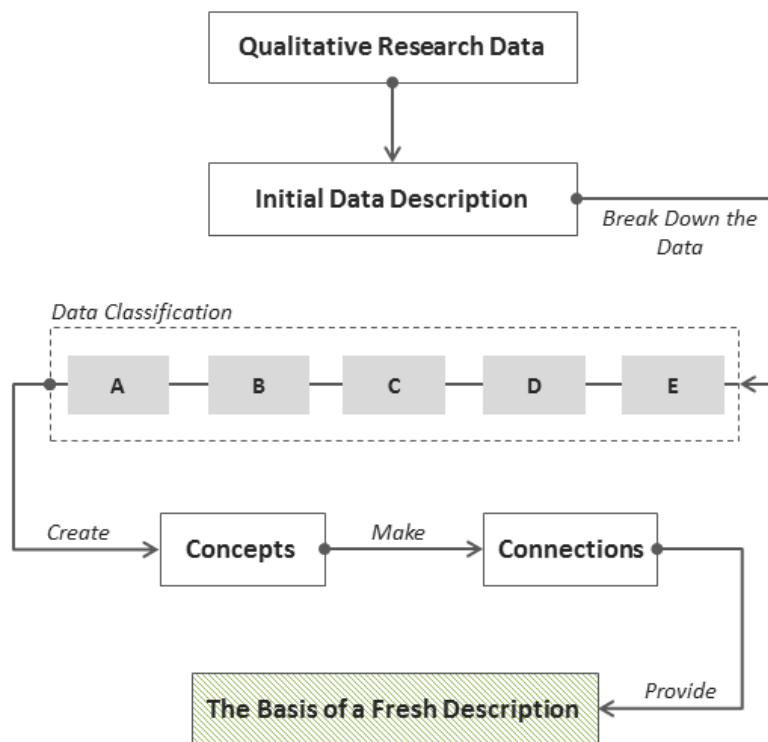


Figure 7.6: Qualitative Data Analysis Process

7.11.1 Qualitative Data Analysis Process

Dey (1993) argued that the process of describing and classifying phenomena and making connections of new concepts is the core of qualitative analysis. His description of these related processes is discussed below.

7.11.1.1 Description

Description plays a crucial role in qualitative analysis as it represents the first step of the entire process of analysis. This step involves comprehensive descriptions of information in a particular context of an act, defined as a ‘thick’ type of description, while the ‘thin’ type is concerned with facts. Indeed, there are three aspects of description in qualitative analysis: the context of activity or action, participant intention and action process.

Context is associated with detailed descriptions of the specific setting where activity and action occur, in order to understand the relevant context as meaning depends on it. This includes the specific characteristics of an activity, its timeframe, structure and relationships. Research context can be an organisation, culture, group of people, individual or society. Intention relates to a participant’s description of a specific action, as it is perceived before making assumptions and concepts of analysing these actions by a researcher. Illustrating participants’ understanding of activities and their own contexts is a crucial element of qualitative analysis. Within the process, the focus changes from a specific context and participant intention to consequence of actions and behaviours. However, description of qualitative research varies and may not include all these aspects. Therefore, when summarising data, the researcher should clearly and adequately outline the vital characteristics of research data and disregard any unnecessary details (Dey, 1993).

7.11.1.2 Classification

A conceptual framework or model is significantly required to provide an adequate and meaningful account of data. Researchers, through a developed framework, can interpret and explain the events or actions of the research context. Indeed, the conceptual elements of a framework capture the importance of actions and how they connect and interrelate. However, interpretation adds new meaning which should not necessarily be aligned with terms or descriptions used by participants themselves, while explanation creates new concepts and accounts of contextual activity or action, in which referring to participants’ intentions is not necessary.

In qualitative analysis, researchers are not able to know what to analyse or compare without classifying the gathered data. Accordingly, classifying the data is one of the essential elements of the analysis process, which represents a solid basis of interpretation and explaining the data in terms of the conceptual foundations. Indeed, organising data into categories provides a method of retrieving the data and effectively facilitating the researcher's comparison activities, which may lead to additional new categories or restructure the current categories. Thus, the conceptual process of classification is associated with two actions which occur in parallel, whereby the researcher splits the data into different parts and assigns them to different categories/subjects. The researcher can then bring these parts together again in an analytical way within a particular context. However, any classification process cannot be done without purpose, which is guided by research objectives achieved through the data analysis process (Dey, 1993).

7.11.1.3 Making Connection

Data classification and related concepts are the key components of making connection. Following the classification stage, the first task is to create concepts which represent solid building blocks of study analysis. Furthermore, researchers must bring these blocks together through a connecting concepts process. Analysts, indeed, can identify substantive connection through developed classifications. At this stage, instead of paying attention to differences and similarities between concepts, researchers should focus on how the building blocks, the concepts, interact. This can be achieved through a conceptual framework of various variables, in particular, examining variations and identifying associations between different variables. Eventually, by studying connections between various categories, the researcher can make new descriptions of the research data (Dey, 1993).

7.11.2 The Use of Computer in Qualitative Analysis

Computers have become an essential element of people's daily lives regardless of their different purposes. In a research context, particularly during the analysis stage, the computer and its various software offer notable support to researchers. However, computers cannot think like individuals. Thus, computers are able to facilitate the data analysis process, but not analysis of the data itself (Dey, 1993). Indeed, new technologies help people to think

differently and more quickly, to complete tasks more efficiently and open new possibilities. Figure 7.7 illustrates how researchers can enhance data collection and analysis procedures through the use of computers.

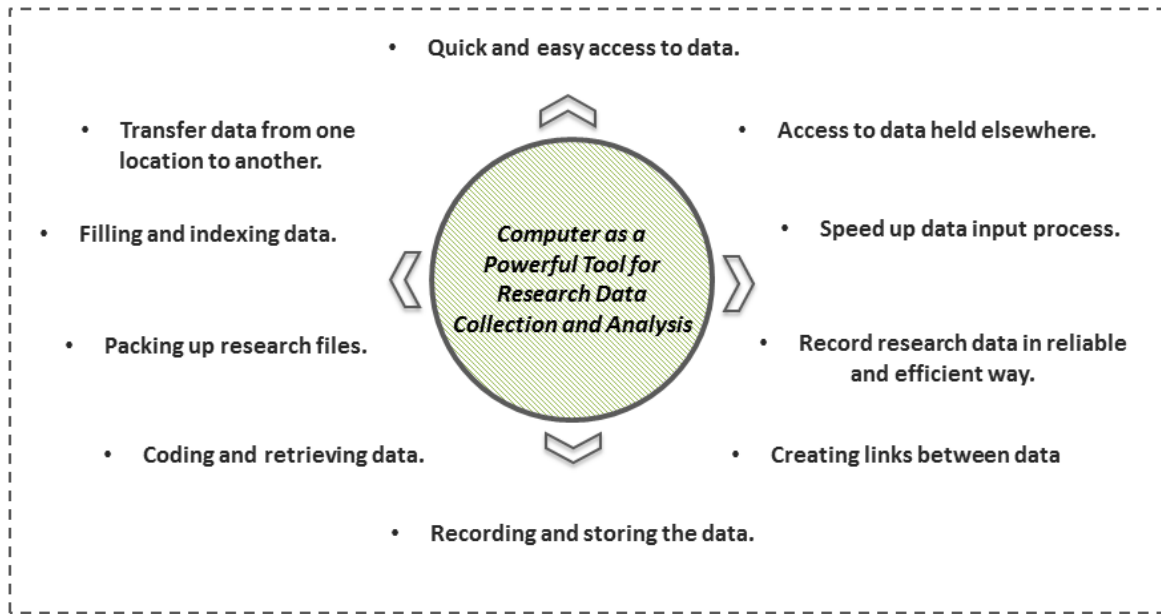


Figure 7.7: The Use of Computers in Research

In qualitative research, efficient data management is crucial for effective data analysis. Computers provide numerous methods and tools for managing data efficiently, which also eliminate the time consumption associated with such activities. During the analysis stage, researchers can benefit from software that can record any required information, e.g. text location and file reference, and effectively store data and allow easy access to adjust different categories. Using computers also allows researchers to create relations between different classifications and their concepts, which is fundamental in qualitative analysis, in order to reach a reasonable conclusion including new description of the research data.

7.12 Research Data Collection and Analysis Mechanism

As explained in Figure 7.8, the researcher followed a clear structure from the beginning of the data collection phase. This was done to complete the entire process of data collection and analysis effectively and efficiently.

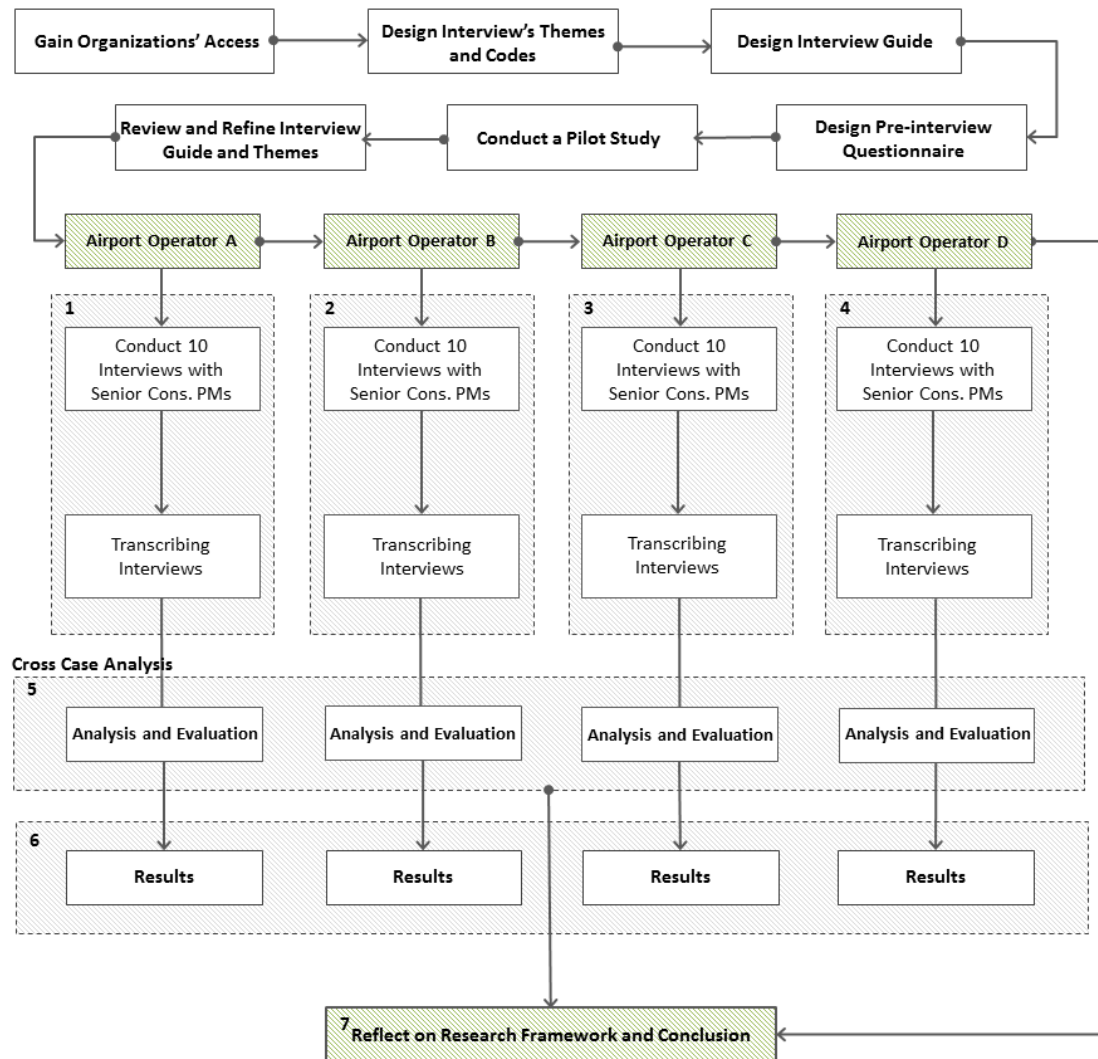


Figure 7.8: Research Data Collection and Analysis Mechanism

The research philosophy is qualitative in nature, including incorporation of various professionals' opinions, perceptions and experiences in the particular context of this research – airport construction projects. These variations rely upon the implications of the research theoretical framework within different settings, participants' organisations, which represent the primary project data gathered systematically, as explained in the above figure, through research interviews.

The interplay between data collection and analysis phases during the research process will, ultimately, develop and evolve the theoretical framework. This will formulate theories and hypotheses following the researcher's understanding of the meaning of the project's primary data and their relationships to the proposed sets of research framework concepts/components.

Claser (1978, cited in Locke, 2005: 45) defined researchers' processes/practices in terms of how they assigned meaning to their gathered data, e.g. through semi-structured interviews, field-observations and archival sources, from relevant multiple sources that are in the same context as "the joint coding and analysis of data." This set of practices offers logic for combining conceptual elements through several analytical activities, in order to refine and develop the theoretical framework. Using this approach during data analysis stage will enable patterns in the data to emerge and to fulfil the research aim and objective.

The analysis stage of the research project's primary data followed certain procedures to transcribe interviews and analyse the qualitative data gathered from interviews.

7.12.1 Method of Transcribing Interviews

This research stage of analysis is to transform interview conversations, data description, from recordings to textual data. Transcript has been prepared manually by the researcher in a verbatim form 'exactly as obtained', and the naturalised transcription approach adopted to generate 'as much detail as possible', regardless of non-verbal and non-intelligible signals (Oliver *et al.*, 2005).

The rationale for using this method of transcription, rather than external services that various companies offer or relevant software, is highlighted in the following:

- It means that the researcher is very familiar with the data.
- It leads to coding which will be used in the analysis phase.
- Participants' voice inflections and changes in rhythm can be recognised, as well as their emphasis on important points which the plain text does not reveal.

- Relations and connections between different themes, sub-themes and concepts can be considered prior to the analysis stage.

7.12.2 Method of Data Analysis

In order to obtain effectively valuable outcomes from data gathered through interviews, a coding technique should be applied where data are coded depending on their purpose (Richards, 2015; Saldana, 2009; Strauss and Corbin, 1990). There are three phases of data analysis:

- **Open coding:** individuals' focus, variables/participants' responses to research themes and sub-themes are identified, explored and categorised.
- **Axial coding:** this stage concerns the organisation context, which involves new ways of putting data together to identify relationships, make connections between themes and sub-themes, explain and understand different variables to which they relate in a specific organisation.
- **Selective coding:** this process concerns all organisations and how they are systematically related to different theme components/sub-theme elements. It involves understanding a range of theme values where relationships are validated and themes and sub-themes are refined and developed.

Following this process new data description can be provided, in which the research framework and its components may be further refined, developed and/or reclassified.

7.12.3 Tool of Data Analysis

Computers are considered as powerful tool for the analysis of qualitative data. Consequently, numerous methods have become available for researchers. Qualitative data analysis software (QDAS) is designed to support qualitative researchers, whether during design, management and data collection, data analysis process or theoretical development and presentation of findings (Di Gregorio and Davidson, 2008). Hutchison *et al.* (2009) suggested that the use of QDAS encourages good quality studies associated with the development of theories and theoretical frameworks. They noted that one of the most powerful, if utilised properly, tools

is software called NVivo, which is capable of facilitating a qualitative investigation process and its various aspects.

However, an NVivo project does not follow a particular procedure, but relies on user's structure, plan and agenda 'incomes'. In order to analyse effectively and efficiently 'textual data' that are relevant to this research project, several steps needed to be followed by correctly using NVivo (Hutchison *et al.*, 2009):

Importing Data Documents

- **Text Data:** interview transcripts.
- **Theme Nodes:** research theoretical framework's themes and sub-themes.
- **Participants and Organisations' Nodes:** organisation names/codes, participant general information (names/codes, working experience in construction/airport projects and number of airport projects managed).

The purpose of this stage is to facilitate the following analytical procedures.

Analytical Procedures

- **Coding:** code items from transcript documents to themes and sub-theme Nodes of each participant.
- **Relationship Nodes:** these represent a connection between two or more Theme Nodes, for example; contributes can influence and have an effect. This can be in the form of a one-way relation – associative or symmetrical.
- **Node Classification:** to ask NVivo to answer particular questions. For instance, making connection between participants and their information, the above Nodes, where 'participants' as classification and other 'information' attributes or 'organisation' as classification and their 'names' attributes/values.
- **Source Classification:** to group sources of each type together, e.g. making connection between organisations and participants.
- **Memo Links and Annotations:** during this stage, the researcher makes notes of

any new information from the interview transcripts of the analysis process. This is to evolve the research proposed theoretical framework (refine and develop themes and/or sub-themes).

7.13 Approaches to Analysing Qualitative Data

Arksey and Knight (2011) stated that the nature of research design largely determines the way data are analysed. In the qualitative data analysis domain, there are two main approaches that deal with data: the deductive approach and the inductive approach (Gerrish and Lacey, 2010; Ritchie and Lewis, 2003). Researchers, when analysing data, can handle each approach in various ways. The methodological differences between both approaches have been discussed early in this chapter, Section 7.3. However, in this section the focus will be on variations in terms of analysing data gathered in accordance with each approach.

Deductive approach considers a predefined or developed framework, in which researchers create their own models, theories or structures for specific data and use these during the process of analysing interview transcripts. Deductive analysis, therefore, enables researchers to confirm, reject or adjust theories according to information gathered from participants through answering particular questions, and to investigate interactions within the data.

Gerrish and Lacey (2010) argued that in a deductive approach, researchers decide in advance the coding framework; this may potentially bias or decrease the value of the entire data analysis process and, accordingly, limit the development of the research framework, its theories and themes. In comparison, for researchers who adopt the inductive approach, prior to the analysis stage, they have no predetermined framework, structure or just a little insight into the research theory. Therefore, they explore the data to assess issues, relationships and common topics that emerge from the data. By using actual research data, the secondary data, analysis structure can be originated and the coding research themes process can be developed.

7.13.1 Selection of Research Qualitative Data Analysis Approach

This study adopted a deductive approach to achieve its overall aims and objectives. The research proposed framework and its hypotheses were developed from observing and investigating various key elements ranging from the construction industry, SM, project

management and HR applications, to the airport construction business. This process was undertaken by the researcher to understand the airport construction context and identify its development needs with regard to strategic project management practices. The mechanisms of a variety of development methods were also examined and their common concepts adopted for the overall research journey to achieve the research goals. Indeed, the entire research questions were aligned with the research framework themes, which were used in the interview transcripts analysis, along with the research framework development process.

Thus, following previous sections, Figure 7.9 illustrates the integrated method of research data collection and analysis strategy that adopted by the researcher. This approach has developed to leverage the researcher knowledge and understanding with regard to managing and controlling practices of airport construction projects, so framework validation process and presentation of recommendations can be achieved effectively.

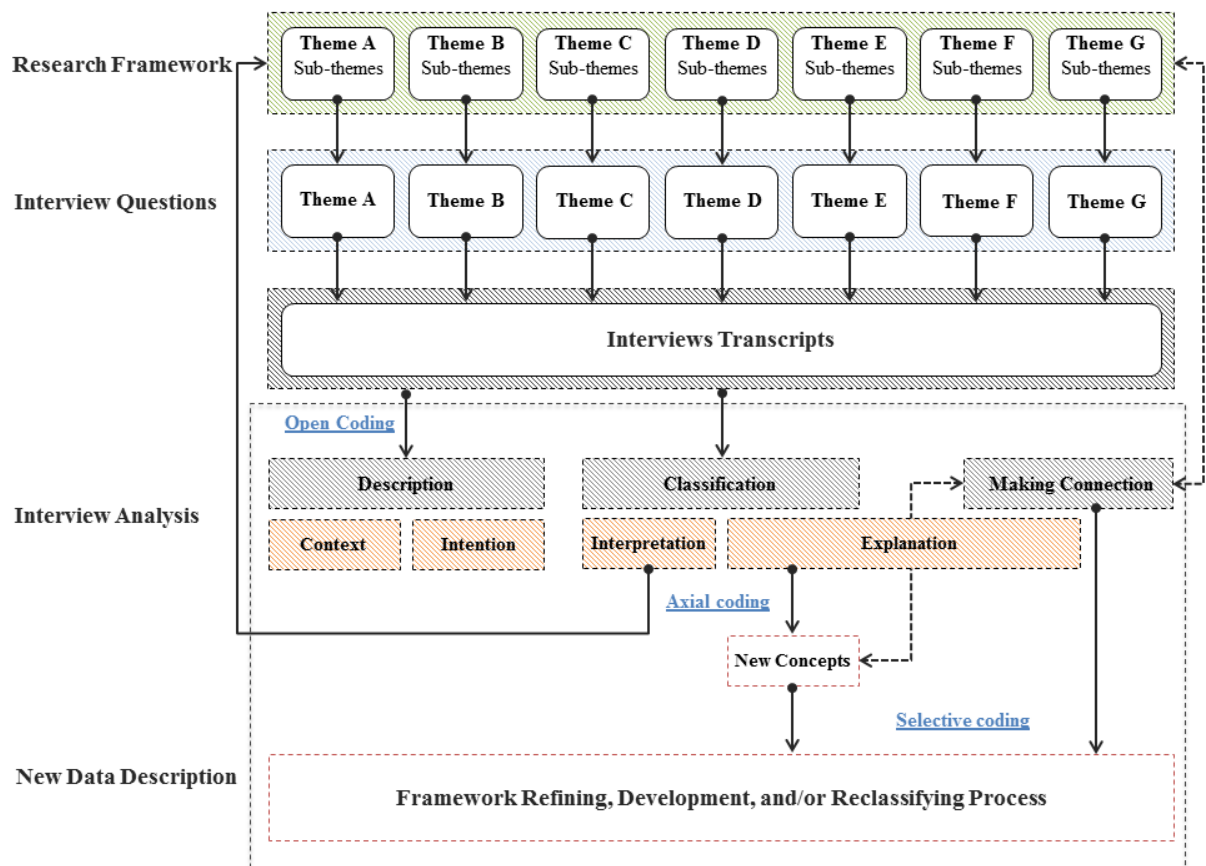


Figure 7.9: Research Qualitative Data Analysis approach

7.14 Theoretical Framework Validation Approach

Evaluating the quality of a research project is essential if its findings are to offer recommendations to utilise in practice (Noble and Smith, 2015). In this research, the proposed framework and its components aim to improve management practices, processes and activities, and to achieve project success and long-term business goals. However, many concepts in the social sciences mean different things to observers. One of the most controversial concepts is validity (Sarantakos, 1994).

Creswell and Miller (2000) argued that the complexity associated with validity is owing to researchers' perception of validity within a particular study type, and their various paradigm assumptions. Various approaches of validity have been developed by researchers, in which they consider the concept most appropriate to their own social researches. In relation to the social world, quantitative and qualitative traditions have different epistemological and ontological meaning, as both concepts view the social world from opposing angles as explained in Section 7.3. However, Golafshani (2003) stated that for some qualitative researchers the concept of validity and reliability are not applicable to their studies. Noble and Smith (2015) confirmed the debate with regard to whether concepts such as credibility, authenticity, validity, adequacy and generalisability are appropriate to use when evaluating qualitative research. In contrast, Lamnek (1988) and Bryman (2008) argued that high level of validity can be achieved through qualitative investigations. The data in qualitative studies are stronger and closer to the research field than in quantitative studies, which are closer to reality. It is a challenging procedure to establish validity in qualitative enquiry.

In qualitative studies, Stenbacka (2001) confirmed the need for validity factor. However, she added that reliability has no relevance in qualitative study as it concerns various measurement factors. Golafshani (2003) noted that the rationale behind evaluating the quality in each research type is the main reason for irrelevance. Quantitative study has the purpose of explaining, while the concept of quality in qualitative research is associated with generating understanding. According to Lincoln and Guba (1985: 316), “since there can be no validity without reliability, a demonstration of the former is sufficient to establish the latter.” Hence, the reliability factor is linked to the validity procedures in a study.

The validity concept can be defined as “how accurately the account represents participants’ realities of the social phenomena and is credible to them” (Creswell and Miller, 2000:124). Validity procedures are associated with various strategies implemented by researchers who seek credibility in their investigations. Validity is not just applicable to research data, but also refers to the implications drawn from the analysis of data (Hammersley and Atkinson, 2007).

The issue of validity in qualitative research context has not been disregarded. There is general agreement, however, that researchers involved in qualitative studies need a demonstration of credibility and validity. To this end, the concept of validity for qualitative research has been redefined by several researchers (Stenbacka, 2001). This has contributed to develop common validity procedures in qualitative projects (e.g., Davis and Dodd, 2002; Lincoln and Guba 1995; Merriam, 1998; Sarantakos, 1994). However, the argument about qualitative research validity concerns the viewpoint of the enquirer when establishing research validity. Creswell and Miller (2000) stated that qualitative researchers deal with lens of validity different from that of quantitative investigators. The former captures the views of people, professionals or individuals, and conduct research, participate in, or review an entire study, while the latter use a lens based on test scores of psychometric instruments and validity of experimental designs. According to Kuzmanic (2009), it is difficult to establish and generalise common criteria for qualitative research validity especially when a particular study is associated with interviews and involves transcription and interpretation of verbal data. Hence, it is important to consider the entire research process and its complete outcome when thinking about validity.

Creswell and Miller (2000) described three lens of research credibility which qualitative researchers can use. The first is the particular view of researchers themselves. It is concerned with the researcher’s ability to determine whether research data are sufficient to establish categories and themes. Patton (1980, in Creswell and Miller, 2000) defined this view as an iteration process or a series of rounds in which qualitative analysts examine whether their data themes, explanations and interpretations are intelligible and make sense. People who participate in the study may be a second lens for qualitative enquirers. Participants can be actively involved in establishing the validity of a study. This view

determines whether participants’ realities have been reflected in research outcomes. The third credibility lens is achieved through individuals who are not affiliated to the study. These external people can be research reviewers or various readers who are familiar with the research context.

The choice of validity procedures not only governs the perspective of different lens. Researchers can also make procedure selection based on paradigm assumptions (Ratcliffe, 1983). Guba and Lincoln (1994: 105) defined the concept of paradigm as “basic belief system or worldview that guides the investigators.” They offered three categories of paradigm assumptions – postpositivist, constructivist and critical influence – as explained in Table 7.7. Thus, the lens and the paradigm assumptions provide a two-dimensional framework that includes different types of validity procedures. The primary lens is that of the study participants within a postpositivist paradigm, which represents the qualitative approach of the research project. Lens of the researcher, study participants and people external to the study will be considered in Section 8.3.

Table 7.7: *Validity Procedures within Qualitative Lens and Paradigm Assumption (Creswell and Miller, 2000: 126)*

Paradigm Assumption/Lens	Postpositivist or Systematic Paradigm	Constructivist Paradigm	Critical Paradigm
	A researcher assumes that qualitative research consists of rigorous methods and systematic forms of inquiry	Constructivists believe in pluralistic, interpretative, open-ended and contextualized perspectives toward reality	Researchers should uncover the hidden assumptions about how narrative accounts are constructed, read and interpreted
Lens of the Researcher	<i>Triangulation</i>	<i>Disconfirming Evidence</i>	<i>Researcher reflexivity</i>
Lens of The Study Participants	<i>Member checking</i>	<i>Prolonged engagement in the field</i>	<i>Collaboration</i>
Lens of People External to the Study (Reviewers, Readers)	<i>The audit trail</i>	<i>Thick, rich description</i>	<i>Peer debriefing</i>

7.15 Research Ethical Considerations

When the concept of ethic arises in any environment, a distinction between right and wrong procedure needs to be established and recognised. The context of ethics, which is associated with the research domain, relates to various practices that must be adopted during the entire process, in terms of principles and values. Ethical behaviour must be aligned with research activities from the planning stage to the conduct and reporting of research. Research ethics are considered during the whole journey of this research project. The researcher has conducted the study in accordance with Northumbria University's ethical governance policy and the procedures on ethics in research. In particular, the following are important in satisfying these procedures.

7.15.1 Informed Consent

The research project directly involved human participants. Research data were gathered from individuals participating in the research through interviews. Consequently, participants were provided with adequate information and explanation about the purpose of the research, in order to help them make a decision as to whether to participate. This was in the form of a short questionnaire including Research Participant Consent Form components (see Appendix G).

7.15.2 Anonymity and Confidentiality

This study contains confidential information, as organisational and project strategy is not only crucial but also often commercially sensitive. Due to this fact, issues related to anonymity and confidentiality were carefully discussed with each participant indicating the terms and extent of this anonymity.

7.15.3 Research Data

During the research project life, all confidential data were stored securely and depending on the prevailing ethics policy may be destroyed at the end of the research. The information was only used for the purpose of research and not for any other purpose. At the end of the research, all data and consent forms were submitted to the Faculty of Engineering and

Environment school office in an evidence file.

8. CHAPTER EIGHT – DATA ANALYSIS AND PRESENTATION OF RESULTS

8.1 Introduction

The research project developed a strategic framework aiming to enhance the performance of managing and controlling airport construction projects within different organisational ownership structures. Since one of the interrelated objectives of this study is to validate the model and present a series of recommendations with regard to managing and controlling the practices of airport construction projects, a qualitative methodological approach was adopted. Therefore, in-depth semi-structured interviews were conducted with senior construction project managers of airport operators. Other individuals in an organisation do not have the broad knowledge of strategic management practices. The extensive information generated from interviews helped the researcher to understand, explore and investigate the practical aspects of the research context, which adequately supported his decision to refine, modify or restructure the research theoretical framework.

The relationship between data gathered and research focus was established. Hence, the researcher, in this chapter, seeks to handle the research data effectively in order to achieve the research aim and related objectives. However, the main focus of this chapter is analysis of the interview data and the presentation procedures. Therefore, detailed analysis of the data collected from each organisation will be discussed independently prior to the cross-organisation analysis. Finally, the validation and evaluation process of the research framework will be considered.

8.2 Interviews Analysis

Following the process of transcribing interview conversations, data description, from recordings to textual data, the researcher can effectively initiate the interview analysis stage. However, this section will be based on the qualitative data analysis process and approach explained in Sections 7.11 and 7.13, respectively. In order to make sense of the data gathered, the exploration and interpretation of procedures will be on three levels: description, classification and making connection. Furthermore, three phases of coding process will be adopted: open, axial and selective coding. Open coding applies during the description stage, while axial coding characteristics appear in the classification phase, in order to create the new concept of data. Cross-organisations analysis and making connection between different management practices will be achieved through selective coding process.

8.2.1 Sample Demographic Details

It is important to have understanding of who the data were collected from. The purpose of this data is to analyse the selected demographic characteristics of senior project managers who run construction programmes or single projects within an airport business environment. Three specific characteristics are analysed: gender, working experience (in the construction industry, airport construction and participant's current role) and the number of airport construction projects that each participant has managed. The demographic characteristics of the respondents are illustrated in Table 8.1.

Table 8.1: Sample Demographic Details

Organization 1 – Private Ownership Structure					
Participant Name	Gender	Working Experience (years)			Airport Projects
		In Construction Sector	In Airport Construction	In Current Role	
<i>OIP1</i>	M	4-7	4-7	0-3	< 16
<i>OIP2</i>	M	4-7	4-7	4-7	< 16
<i>OIP3</i>	F	4-7	4-7	4-7	1-5
<i>OIP4</i>	M	0-3	0-3	0-3	1-5
<i>OIP5</i>	M	< 20	11-20	0-3	6-10
<i>OIP6</i>	M	< 20	11-20	8-10	< 16
<i>OIP7</i>	F	< 20	11-20	0-3	< 16

<i>O1P8</i>	M	< 20	8-10	4-7	< 16
<i>O1P9</i>	M	< 20	8-10	0-3	6-10
<i>O1P10</i>	M	< 20	11-20	4-7	< 16
<i>Organization 2 – Public Ownership Structure</i>					
<i>O2P1</i>	M	< 20	< 20	0-3	1-5
<i>O2P2</i>	M	< 20	11-20	11-20	11-15
<i>O2P3</i>	M	< 20	11-20	8-10	< 16
<i>O2P4</i>	M	< 20	< 20	4-7	11-15
<i>O2P5</i>	M	< 20	< 20	< 20	< 16
<i>O2P6</i>	M	< 20	< 20	< 20	< 16
<i>O2P7</i>	M	< 20	< 20	11-20	6-10
<i>O2P8</i>	M	< 20	< 20	8-10	6-10
<i>O2P9</i>	M	< 20	< 20	< 20	< 16
<i>O2P10</i>	M	< 20	11-20	4-7	11-15
<i>Organization 3 - Joint Public Private Venture</i>					
<i>O3P1</i>	M	< 20	4-7	0-3	1-5
<i>O3P2</i>	M	< 20	4-7	0-3	1-5
<i>O3P3</i>	M	11-20	11-20	< 20	6-10
<i>O3P4</i>	M	< 20	4-7	4-7	1-5
<i>O3P5</i>	M	< 20	8-10	8-10	6-10
<i>O3P6</i>	M	< 20	4-7	0-3	1-5
<i>O3P7</i>	M	4-7	0-3	0-3	1-5
<i>O3P8</i>	M	11-20	4-7	4-7	1-5
<i>O3P9</i>	M	8-10	0-3	4-7	1-5
<i>O3P10</i>	M	< 20	8-10	0-3	6-10

The interview study was conducted throughout the second half of 2013. As shown in Section 7.7.3, the target population was determined: senior project managers responsible for overseeing airport construction projects from inception to completion in terms of people and programme process. This rationale is seen as a great opportunity to provide the required information that supports the model validation process and identifies recommendations for the practice of managing and controlling airport construction projects. Thirty face-to-face interviews were carried out with various senior project managers in three different airport operators – 10 interviews in each organisation. The respondents identified themselves as general directors, senior project managers or heads of various business divisions. Due to the anonymity and confidentiality explained in Section 7.15.2, both organisation and individual names will remain anonymous – O(x) and P(x) refer to organisation and participant, respectively.

The researcher did not focus on gender equity. However, the findings indicate a very low female participation rate (6.67%). This fact supports various studies, as mentioned in the literature review, confirming that the construction industry is typically male-dominated (Agapiou, 2002; Dainty *et al.*, 2000; Loosemore *et al.*, 2003; Worrall *et al.*, 2010). In total, 68% of those interviewed had managed five or more construction projects in different airports. This meant that they possessed a wide variety of management experiences, which added great value to the research outcomes. In addition, the majority of the participants had over 20 years of experience in the construction industry and an average of 10 years of experience in airport construction. Interestingly, in spite of the wide experience in the construction industry of most participants and the airport business, only 20% of senior project managers had been in their current role for over 10 years. This can be attributed to the fact that gaining enough construction experience and a good reputation takes a significant number of years before managers can manage an airport construction or undertake a challenging and complex project.

8.2.2 Data Description and Classification

8.2.2.1 Theme A – Project Team Formulation

Each organisation's data description of Theme A, including context and intention, is illustrated in Appendix J. The interpretation stage of data classification is also discussed in Appendix J.

8.2.2.2 Theme B – Project Team Strategy

Each organisation's data description, including context and intention of Theme B, is illustrated in Appendix K. The interpretation stage of the data classification is also discussed in Appendix K.

8.2.2.3 Theme C – Stakeholders’ Engagement

Each organisation’s data description, including context and intention of Theme C, is illustrated in Appendix L. The interpretation stage of data classification is also discussed in Appendix L.

8.2.2.4 Theme D – Leadership Structure

Each organisation’s data description, including context and intention of Theme D, is illustrated in Appendix M. The interpretation stage of the data classification is also discussed in Appendix M.

8.2.2.5 Theme E – Project Culture: Behaviours and Relationships

Each organisation’s data description, including context and intention of Theme E, is illustrated in Appendix N. The interpretation stage of the data classification is also discussed in Appendix N.

8.2.2.6 Theme F – Internal and External Communication

Each organisation’s data description, including context and intention of Theme F, is illustrated in Appendix O. The interpretation stage of the data classification is also discussed in Appendix O.

8.2.2.7 Theme G – Stakeholder Development Strategy

Each organisation’s data description, including context and intention of Theme G, is illustrated in Appendix P. The interpretation stage of the data classification is also discussed in Appendix P.

8.2.3 Data Making Connection

In order to make connection, data classification and emergent concepts are required. The data classification process was discussed in a previous section with regard to each organisation context. Through a research framework and its conceptual elements, participants' responses to each theme and its sub-themes have been combined to provide an adequate and meaningful account for every organisation. Accordingly, understanding context actions adds new meaning to the data, which will be used in explanation to create new concepts and identify connections.

8.2.3.1 Theme A – Project Team Formulation

8.2.3.1.1 New Concept: Organisation 1 – Private Ownership Structure

In O1 organisation strategic level and senior project managers play an important role in creating a high performing cross-functional project team. O1 is following a very structured and organised method as shown in Figure 8.1. The private operator provides all support needed for success and plays a strategic role through developing a strategic plan for every five-year period (quinquennium), which includes a full business plan for operation, development and investment. Five-year framework agreements with a mix of external resources are also signed. Management services providers (MSPs) work in a number of different projects in order to support senior construction project managers in terms of project programme, cost, schedule and contract management. Numerous consultancy services, financial, design, communication and health and safety, are available for senior project managers through framework consultants agreements. Framework contractors' agreements ensure dealing with expert people in airport-related business. Senior project managers, on the other hand, are concerned about people as regards a specific project during its various stages, whether in-house members, contractors or consultants. Accordingly, they develop a balanced team, in terms of individual skills and type, throughout the project lifecycle, which has clear goals to help orientate the project team to mutual objectives along with clear roles and responsibilities. Through psychometric testing various people at different project phases are selected. Different interviews/scenarios are conducted with available contractors and consultants in order to select the most appropriate parties for a particular project.

Hence, such a project team formulation process in each of O1's construction projects develops an integrated project team, which aims to deliver a successful project. According to the literature review, project team integration increases team performance and improves project delivery process (Baiden and Price, 2011). As shown in Figure 8.2, integration includes sharing various skills, competences and knowledge, and removing all traditional barriers between different parties (Austin *et al.*, 2002). Due to the proper adoption of integration philosophy in O1, these parties, from different cultures, and with different needs and goals, have merged into a single project team with mutual interest and collaborative alignment of processes and cultures (Baiden *et al.*, 2006; Hayes, 2002; Katzenbach and Smith, 1993; Scarnati, 2001). Indeed, the five-year framework agreement and the established relationship between O1 and its external parties have provided effective integration. All airport projects are funded by the airline through landing charges. Thus, because of the nature of O1's ownership structure, key airlines stakeholders are part of the project team, which increases collaboration between the parties involved and creates common project objectives and interests. The effective and efficient performance of the external parties involved in a project is mainly driven by future contract opportunities as they are an organisation's framework partners.

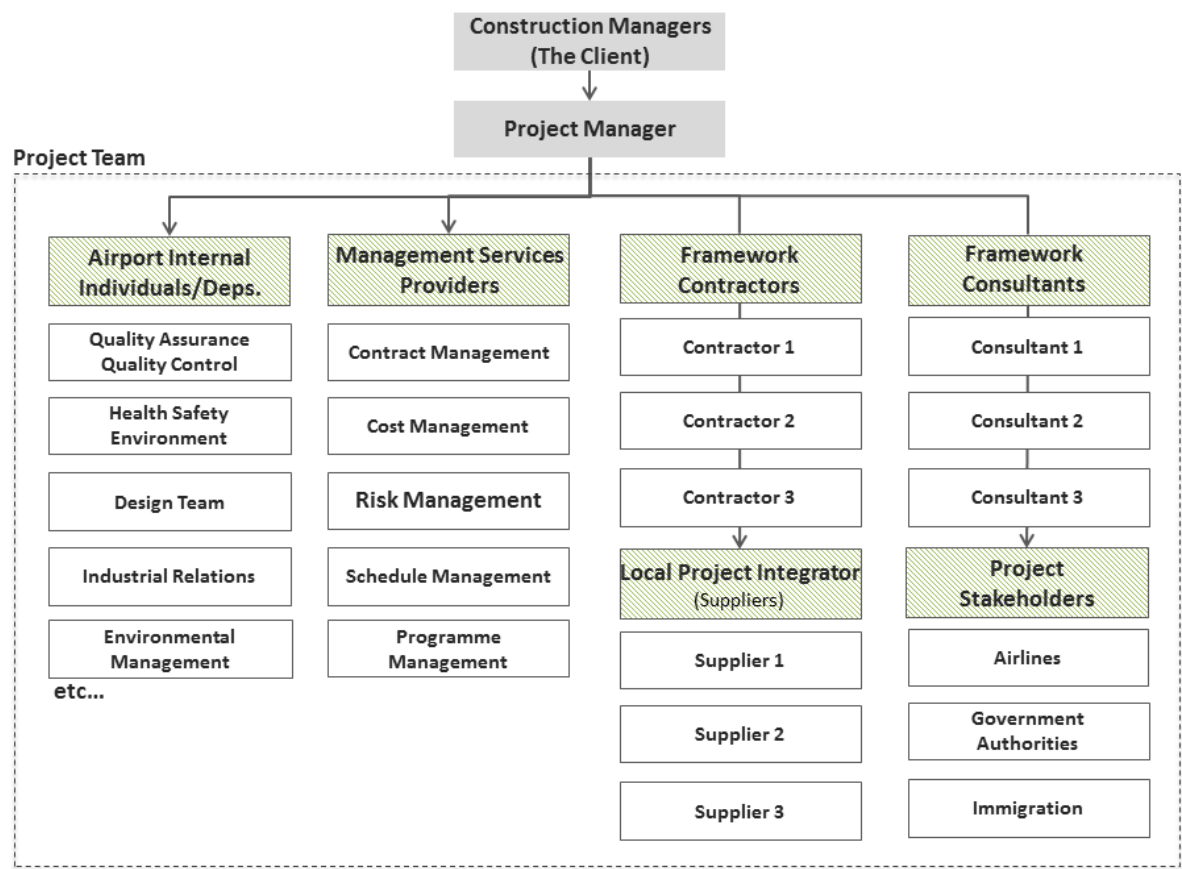


Figure 8.1: Organisation 1 – Project Team Design

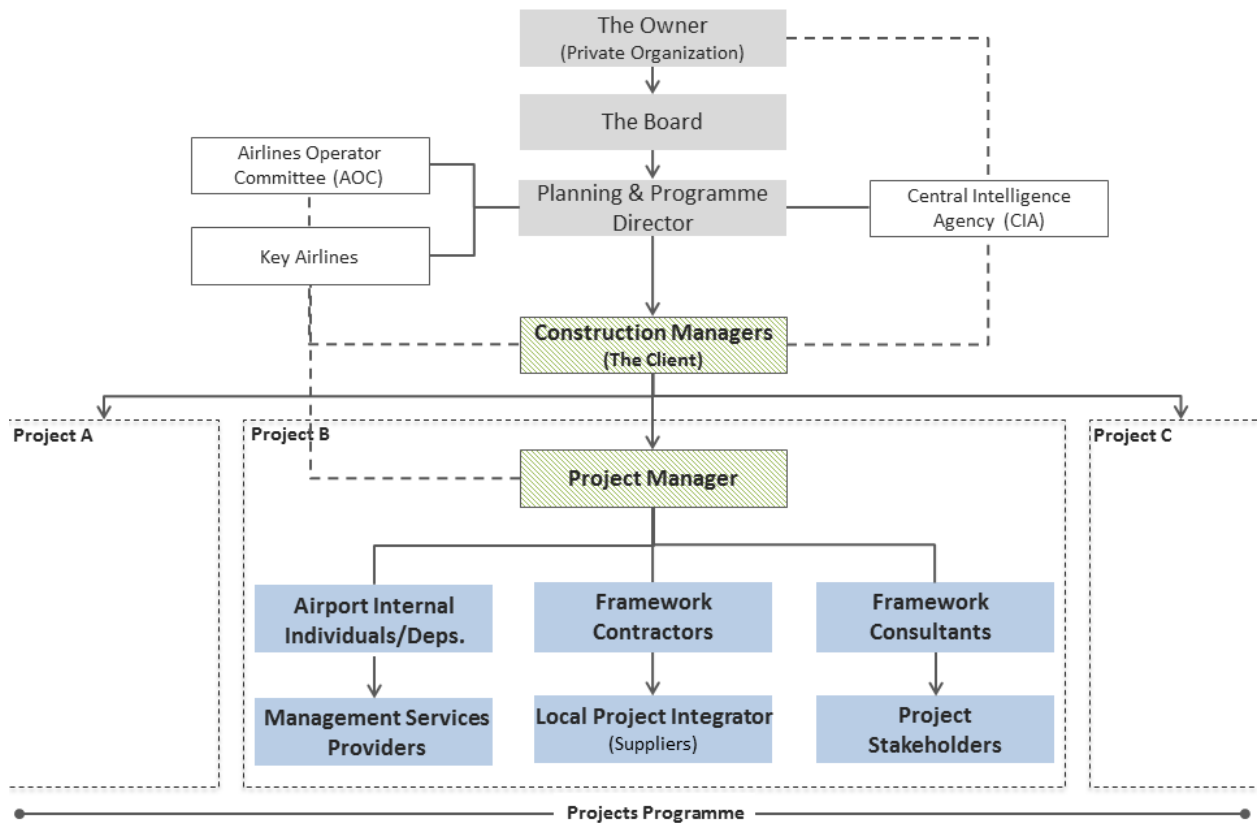


Figure 8.2: Organisation 1 – Project Delivery Method

8.2.3.1.2 New Concept: Organisation 2 – Public Ownership Structure

The project team forming process has no structure or defined selection method. The engineering department that is responsible for infrastructure planning and development is divided into two isolated units with unique organisation structure, management practices and project agendas. However, in all projects, the supervision team and its director develop internally from various engineering disciplines as shown in Figure 8.3. This team, in some projects, may be responsible for project management activities in addition to supervision responsibilities. Team members can be selected by top-management or the appointed project director, which is mainly based on individual experience and competence, but can also include nominated young engineers. As shown in Figure 8.4 and 8.5, project management organisations, consultants and contractors join projects following a tender process organised for specific projects throughout the various project phases. The relationship between internal and external people is contractually based, in which case, the in-house project team supervises both the contractor's and consultant's activities, and the project coordinator

manages stakeholders' requirements and related matters. Accordingly, the project team is cross-functional, but not in an integrated form where different parties work together as one unit and share mutual objectives. As mentioned in the literature review, the different interests linked to construction activities and the various challenges and difficulties associated with getting team members to understand other individuals' contributions do not encourage the idea of team integration (Baiden *et al.*, 2006).

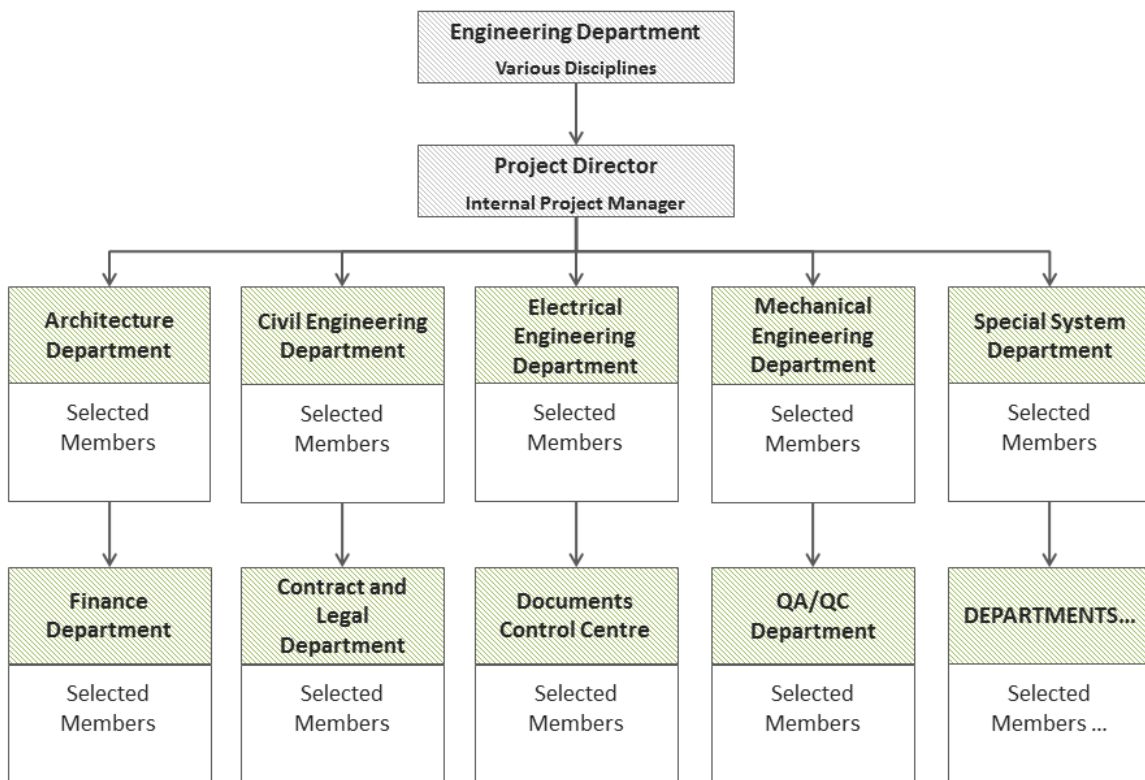


Figure 8.3: Organisation 2 – Project Team Design

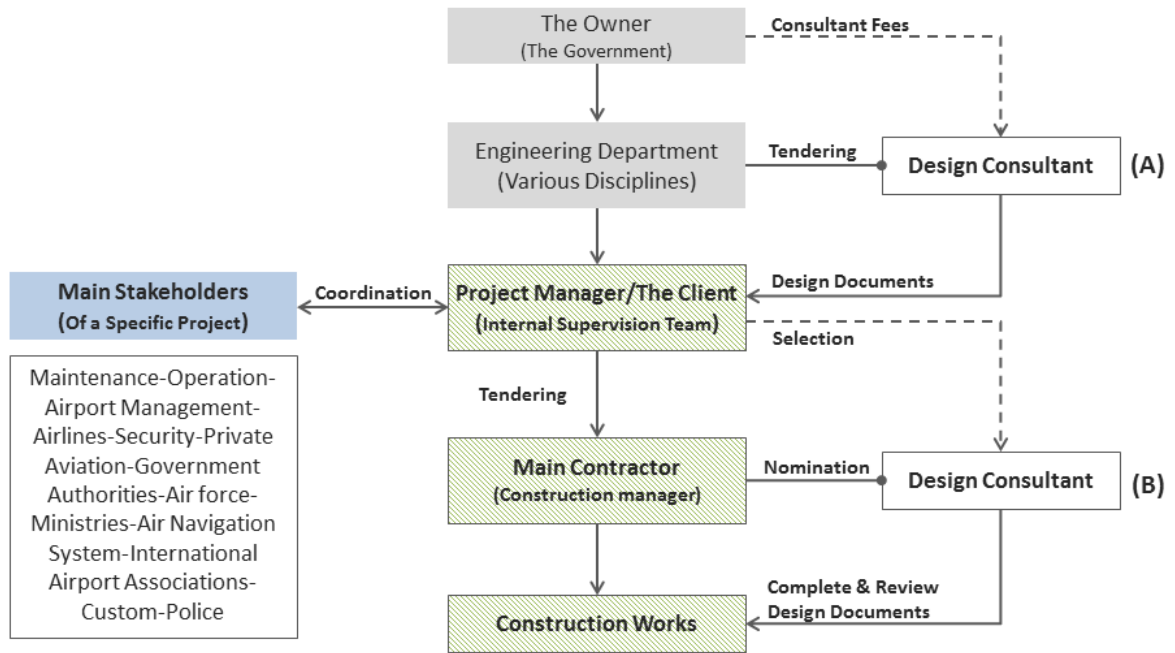


Figure 8.4: Organisation 2 – Project Delivery Method A

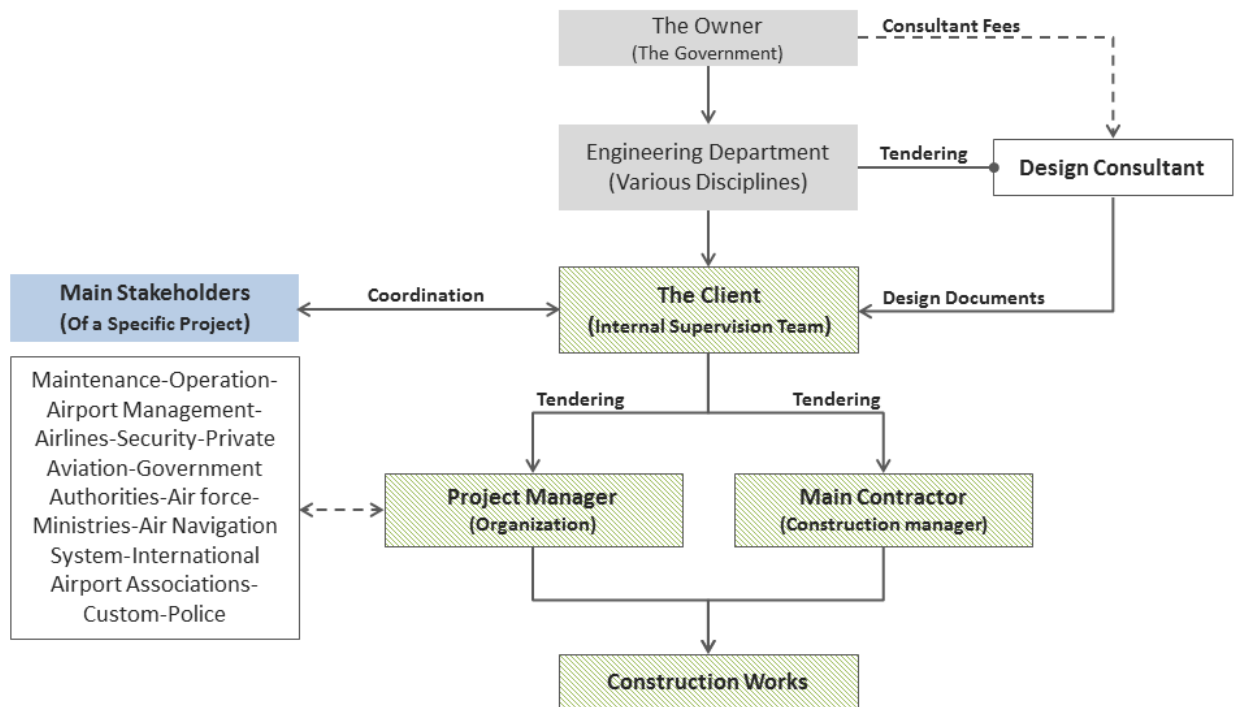


Figure 8.5: Organisation 2 – Project Delivery Method B

8.2.3.1.3 New Concept: Organisation 3 – Joint Public-Private Venture

In the joint venture cooperation project the team development process is based on a structured method as shown in Figure 8.6. The government owner establishes a project-client organisation which is responsible for obtaining all information from the stakeholders involved in the project, in order to provide minimum technical requirements (MTR). Following this, the project tender can be announced, which is, in this case, in the form of a build, transfer and operate (BTO) arrangement. The construction project team is built from organisations awarded the contract, an international construction manager (CM) and local contractor/subcontractors with equal or different percentage share as shown in Figure 8.7 and 8.8. The project team comprises all disciplines required in airport development, and team members' roles and responsibilities are shared between both companies and based on a know-how structure. The project departments include individuals from both companies who work in the same environment. The client organisation and joint-venture partners have managed and operated the airport for 25 years. Thus, time and quality are fundamental success factors for all parties which are able to ensure effective and efficient performance. Hence, high project support and mutual interests have resulted because of the nature of contract, which also created a fully integrated project team. Austin *et al.* (2002) argued that once parties' various interests and a project's success and failure are shared, a new and unique fully integrated team identity will emerge.

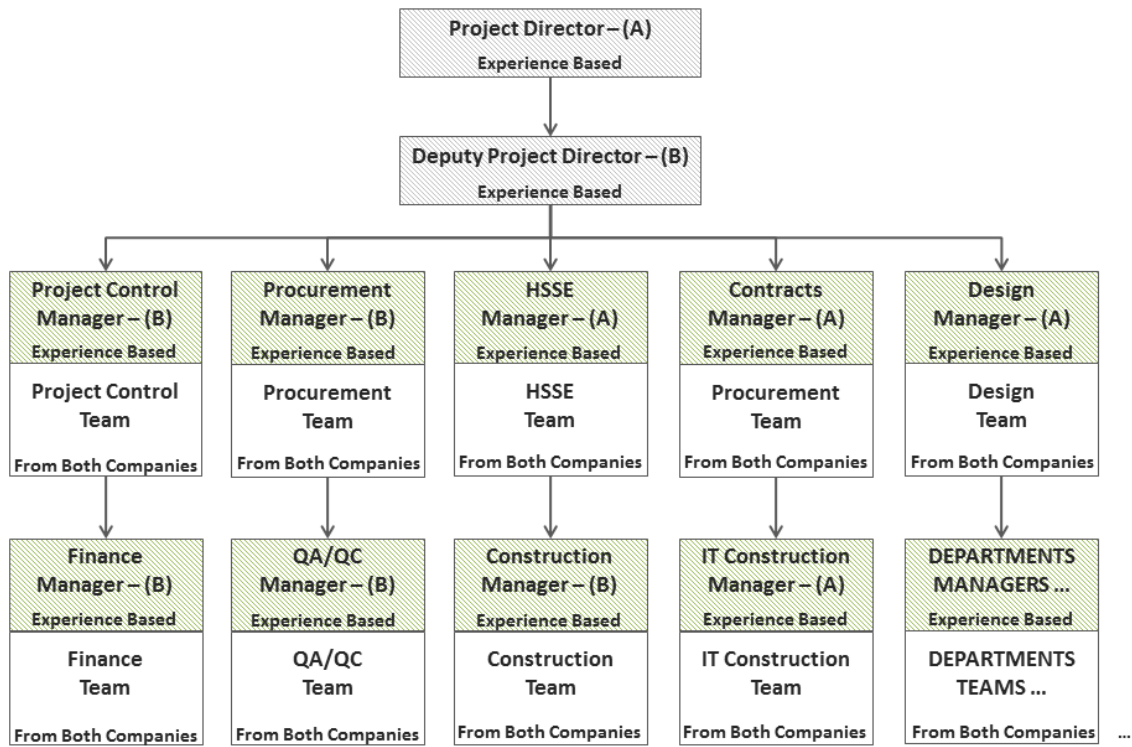


Figure 8.6: Organisation 3 – Project Team Design

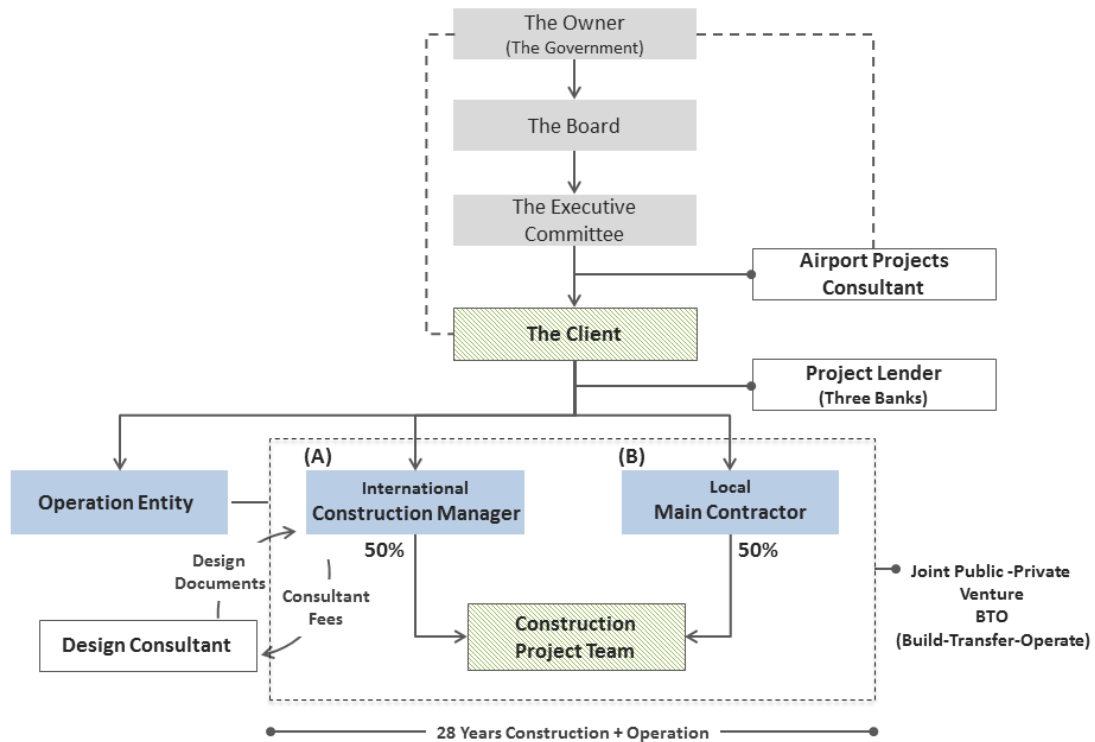


Figure 8.7: Organisation 3 – Project Delivery Method A

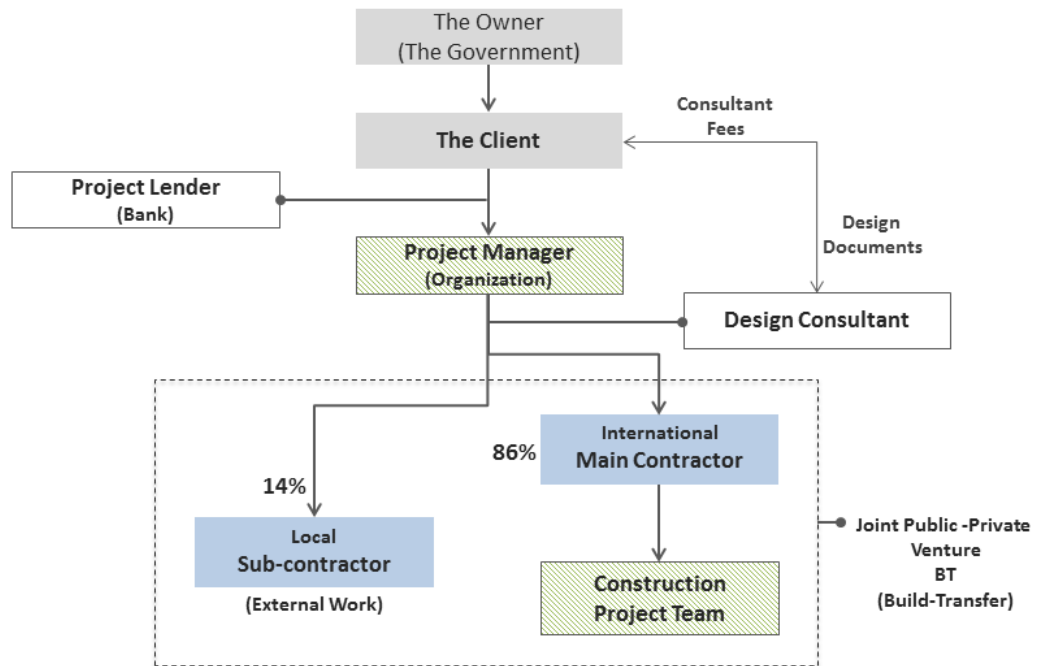


Figure 8.8: Organisation 3 – Project Delivery Method B

8.2.3.2 Theme B – Project Team Strategy

8.2.3.2.1 New Concept: Organisation 1- Private Ownership Structure

O1 has established standards, which were developed by APM, to follow when setting out project goals and objectives, in terms of getting internal and external parties to work together at an early stage. In this context, furthermore, stakeholder's expectations, delivery strategies, the nature of relationships and the various team members' roles and responsibilities are discussed and identified. All project team members and relevant stakeholders meet on a regular basis in order to discuss project status and related obstacles, except for sensitive financial matters which are only shared with particular people. Senior project managers in various projects play a crucial role in providing different teamwork characteristics, in relation to all parties involved, and work accordingly. According to Walker (1996), an effective teamwork environment is achievable through managers who establish effective relationship practices between participants. However, it has been the case that a project manager's efforts proved insufficient when a project experience concerned traditional contracting procedure.

An official collaborative working environment is also crucial; it exists as a result of the relationships between various project parties and is based on effective teamwork philosophy. This supports the findings of Bender and Septelka (2002), who stipulated that bringing people together does not ensure the creation of a teamwork environment; instead, the significant effort of every single member of a project team is required to ensure cooperation, coordination, support and the sharing of information. Hence, on account of the nature of O1's framework collaborative approach, a healthy working environment is created, encouraging various parties to work together and increase transparency, openness, commitment and trust levels.

8.2.3.2.2 New Concept: Organisation 2 – Public Ownership Structure

In O2, most managers believe in the important role that teamwork plays in successfully achieving targets. Therefore, they encourage individuals to cooperate, coordinate and share project information. However, this strategy is fully adopted within the internal project team, where there is a lack of trust in sharing project information and working together throughout a project lifecycle. According to Chow *et al.* (2005), such relationships significantly affect project information flow, which creates boundaries between internal and external parties and leads to a misunderstanding of issues. What is surprising is that upper managerial level does not have full confidence in internal resources, as two supervision teams have been replaced by external project management organisations midway through a project journey and assigned to other tasks within the organisation. This, indeed, significantly reduces the level of trust within an organisation's internal environment as well as individuals' commitment, which negatively affects the development of teamwork. Teamwork cannot be possible when there is a cynical view about others (Rabey, 2003; Scarnati, 2001). It is obvious that in-house people work closely with the design consultant during the project scope development process at an early stage of the project, while during the construction phase supervision and monitoring are mainly the key objectives of the client-contractor's relationship. The late involvement of some project parties contributes to ambiguities and obstacles which can be potential barriers to the development of an effective teamwork environment.

8.2.3.2.3 New Concept: Organisation 3- Joint Public-Private Venture

After awarding the BTO contract, the project joint-venture team and other stakeholders including the owner, client, consultant and lenders discussed the project scope and established common objectives, lines of communication and coordination method. Accordingly, each party became aware of the parties' roles and responsibilities and what needed to be accomplished. The joint-venture team and project client that represent key stakeholders share the same interest, which has developed from the nature of the project contract. Due to the multicultural project environment of O3 including different languages, cultures, beliefs and attitudes, project members faced some difficulties at early project stages, which is a common issue in multinational project experience as mentioned in the literature (Chow *et al.*, 2005). Furthermore, project objectives are well identified, the level of trust is high between parties involved, activities are shared and cooperation and coordination method is established. Hence, through an effective implementation of teamwork characteristics, project parties managed to tackle these issues and effectively work together as a single unit towards their mutual goals. The literature suggests that the competitive nature of construction might negatively affect teamwork, prevent consensus between project parties, impede communication and obstruct agreement and understanding between participants (Chan *et al.*, 2001; Chow *et al.*, 2005). In contrast, the BTO agreement and associated future operational roles of the key partners, CM, contractor and project client have significantly facilitated the development of teamwork characteristics and provided an effective working environment.

8.2.3.3 Theme C – Stakeholders' Engagement

8.2.3.3.1 New Concept: Organisation 1 – Private Ownership Structure

O1 follows a structured and organised method when dealing with its various stakeholders. An official stakeholders' management plan is developed and updated on a regular basis. Senior project managers, who are responsible for stakeholders' activities, ensure proper engagement process and effective management practices through supported stakeholders' group structure, stakeholders' matrix, stakeholders' assessment method, stakeholders' meetings and workshops and contract change system. As a result, they are able to distinguish major stakeholders at each project stage, determine their amount of influence on a project,

properly assess their numerous requirements, effectively control scope changes and update them by project status. All these arrangements can be developed and structured due to the huge number of parties that need to be engaged, the significant amount of influence they hold over projects and their various requirements and vital contributions they make to the decision-making process. In addition to managing the duplicated roles that some stakeholders have, major airlines operators own stakes in the organisation and fund various infrastructure projects, which supports Karlsen's (2002) argument. Thus, O1 has realised the importance of stakeholders during overall project lifecycle and identified benefits associated with their engagement. An incentive plan is also in place for stakeholders, whether internal employees or external parties, in order to provide great financial benefits, ensure effective performance, encourage creative ideas and increase commitment level. By implementing a proper stakeholders' management and engagement plan, O1 increases its efficiency and stakeholders' commitment, reduces waste of time and materials, reduces conflict risks and associated litigation, provides better services and products to end users and improves organisational learning, all of which have been mentioned in the literature (Chinyio and Akintoye, 2008).

8.2.3.3.2 New Concept: Organisation 2 – Public Ownership Structure

An official stakeholders' management plan in O2 is neglected. Different methods have been adopted by senior project managers to manage stakeholders' related activities. Moreover, in most cases, there is no direct relation between project team parties, including contractors and consultants, and external people. These activities are managed by an allocated coordinator, disciplines representatives or department heads. Their major task is to obtain stakeholders' requirements at an early project stage to support the design documents. However, during the construction stage stakeholders, excluding contractors and consultants, are not highly involved as the government project owner makes the final decisions. What should be noted here is that stakeholders' matrix and associated models and plans are not applied. Although meetings and workshops are arranged, when needed, or issues arise, no structured method, organised session or official consideration is connected to this crucial matter. This leads to significant waste of time as each case is individually planned and considered. Communication by means of official letter correspondence between parties involved and the required signatures from department heads and upper management level increase time

inefficiency. Indeed, the electronic method of communication was considered in two project managers' experiences as a success factor in terms of minimising delays, which is a most important element in stakeholders' management, where a significant amount of time is spent on information and communication management. Project information is available on request from the document control centre (DCC); an updating information system is however unavailable. Hence, lack of effective development of such important plans contributes to insufficient involvement and ineffective communication with stakeholders, which can lead to project failure (Innes and Booher, 1999). According to Chinyio and Akintoye (2008), this may also prevent knowledge learning and incentives that could enhance performance and produce greater results, which is consistent with O2 findings.

8.2.3.3.3 New Concept: Organisation 3 – Joint Public-Private Venture

In O3 the case of stakeholders is different; external stakeholders' management is not one of the project manager's or even project team's obligations. The project client who is assigned by the government owner is responsible for all stakeholders' activities and, most importantly, stakeholders' analysis, which identifies their expectations, requirements, interfaces, relationships and authorities. Roles and responsibilities have been decided during early project stages through the joint-venture contract agreement. The reason for this is not obvious, but it may have something to do with know-how and efficient time consumption. therefore, each partner can focus on its strength. The CM organisation has expertise in airport construction projects and management process, the local contractor associated with subcontractors and suppliers' relationships and other internal matters including political issues. The project client coordinates and manages communication and coordination activities with airport stakeholders and local authorities, as well as provides project direction and necessary guidance. Accordingly, all parties can effectively and efficiently achieve their common goal, and accomplish the project within the scheduled timeframe and with the quality expected. With regard to the high priority associated with time, quality and safety incentives, plans for internal employees and external subcontractors have been developed, which ensure on time completion, better employee performance and behaviour demonstrating close adherence to safety regulations. It has been mentioned in the literature that the engagement process, if properly managed in a project, between parties who have distinct interests in a project's outcomes and different knowledge of working practices, can contribute

to numerous positive results (Innes and Booher, 1999). However, the shared interests and common objectives of key project partners facilitate the development of ‘we’ and the single team concept, as explained in previous discussion of theme results, which may also ensure stakeholders’ proper engagement practices and efficient sharing of project information.

8.2.3.4 Theme D – Leadership Structure

8.2.3.4.1 New Concept: Organisation 1 – Private Ownership Structure

Throughout O1’s project lifecycle, project leadership changes according to project phase and individual competences and skills. These leaders belong to different project stakeholders’ organisations that represent project team members. The internal project development manager leads in the project’s early stages, when the project, related scope, communication and relation methods are established. The external project delivery manager, from the framework contractors’ side, manages the actual construction activities. At a later stage in the project, prior to the completion, the internal facility manager takes project responsibility, which he maintains until hand over. Thus, a systematic method of leadership structure is in place. However, an internal senior project manager manages the entire project team and a contract specialist, from the management services providers’ (MSPs) side, holds overall project accountability in terms of scope and contract changes. Therefore, various internal and external individuals share project responsibilities and accomplish collectively entire project activities in order to perform successfully leadership functions and effectively manage various project stages. Indeed, this supports several arguments in the literature regarding mega construction projects associated with a high level of complexity, ambiguity and segmentation, which need a shared leadership approach, and whereby organisations or leaders who have the most relevant skills and experiences of a specific phase lead the project (Crevani *et al.*, 2007; Clarke, 2012; Odusami *et al.*, 2003).

8.2.3.4.2 New Concept: Organisation 2 – Public Ownership Structure

O2 strategic policy does not encourage the concept of shared leadership; instead, top-management appoints an internal manager who is responsible for overall project phases in terms of leadership and management activities. Their decision is not based on individual

leadership and management competences, where position and personality are the selection criteria. By adopting this approach, an unqualified leader may hold project responsibility and mislead his project team, which contributes to ineffective project performance. Indeed, O2 has experience of this situation; as a result, the entire project team was changed during the construction phase, which led to massive delay and additional project cost. Leaders' ability to learn, problem-solve and deal with internal and external people as well as ambiguities are key characteristics and more important than planning and controlling skills. Clarke (2012) noted that most leadership problems in many complex projects over the years have been due to the lack of leadership skills, as most organisations have been focusing on leader's technical expertise.

8.2.3.4.3 New Concept: Organisation 3- Joint Public-Private Venture

Leadership structure of O3 is totally shared between the construction team's partners, the CM and contractor organisations. The project director, deputy project director and department heads, who are from both companies, constitute the shared leadership structure. Selection criteria are based on know-how approach which includes skills, competences and the knowledge of individuals and organisations. All related matters including authority are defined and agreed on at an early project stage, in particular, at the organisational structure development stage, which is managed by the CM organisation. Project segmentation and different leadership skills, knowledge and competences needed in such projects are fully considered and understood, which leads to adopting this specific approach of leadership structure. Accordingly, project team members ensure a fair decision-making process and effective and efficient flow of information and communication activities, which are horizontally based between various departments (Crevani *et al.*, 2007). The government project owner is only involved in financial matters.

8.2.3.5 Theme E – Project Culture

8.2.3.5.1 New Concept: Organisation 1 – Private Ownership Structure

One of the major concerns of O1, with regard to project management development practices, is project culture and its associated values. The future quinquennium 6 (Q6) and related

professional collaboration scheme are all about project values and behaviours. This applies to construction project contracts, whether with intelligence client or framework contractors and consultants or even with subcontractors and other external partners who support the airport construction business. The dimensions of O1's project culture include politics, safety, relationships, behaviours, communication, planning, execution, conditions, achievements, learning, enjoyment, visibility, respect, trust and leadership. The current business operation has its required technology, process and management practices that lead to project success. Project culture has become a main focus as the intention is to achieve more than traditional success, to add more value to a project journey and to enhance a project environment, so performance can be leveraged. Thus, various sessions, forums, workshops and training arrangements are in place at various management levels for internal people and other stakeholders involved in different projects. Priority is given to safety related matters and to risk on site knowledge; a two- day safety induction must be completed by everyone within business environment. A written guide and a DVD which explain O1's behaviour regulations are prepared on values, as lack of individual safety knowledge, inadequate safety training activities and lack of safety supervisors on site are behind most accidents at construction sites (Sawacha *et al.*, 1999).

Through adopting this new approach and relationship principles, O1 significantly supports and adds significant values to its collaborative work and increases integration between individuals. In the literature, Kadefors (2004) mentioned that relationships within construction projects are often inefficient and adversarial; therefore, developing shared values, assumptions and beliefs between distinct parties creates a superior working environment, perceived as individual tools of interaction and what makes a successful project team. However, an effective organisational culture is much more important when people can understand it (Ankrah *et al.*, 2008). Indeed, this has been adopted and implemented in O1. The project culture and its relevant values do not just affect individuals' relationships, but also facilitate the development of a project teamwork strategy, ensure better management practices and facilitate leaders' duties and stakeholders' engagement process. In addition, it boosts various levels of trust, which is so vital in construction business, whether calculus-based trust, relational trust or institution-based trust (Kadefors, 2004).

8.2.3.5.2 New Concept: Organisation 2- Public Ownership Structure

Most senior project managers in O2 understand well how developed project culture enhances a project environment and increases performance level. They have undertaken several initiatives to introduce specific aspects of project culture in order to increase people's commitment, transparency and trust. However, within the entire organisation no official and clear agenda has developed in this respect. Even new members' project induction is based on project managers' experiences, whether verbal or informal sessions. Surprisingly, safety knowledge is overlooked as no attention is paid to safety issues apart from traditional safety requirements on construction sites, safety gear and a safety site representative. This means that a structured approach has not been followed.

Lack of project culture within O2 might have been due to the nature of fragmentation, not because of the industry itself, instead of project team and working environment. Indeed, when boundaries exist between parties, the need for a shared culture and related strategies becomes less of a priority for an organisation. It is crucial, however, if the organisation intends to work collaboratively and improve business operation, which might significantly provide a healthy working environment in terms of commitment, trust, transparency, communication, team integration and, most importantly, project completion on time. Bringing various people together who belong to distinct organisations and asking them to achieve a common goal within a defined period of time needs mutual identification, which can be achieved through the cultivation of the right project culture and all behaviours and relationship values (Kadefors, 2004).

8.2.3.5.3 New Concept: Organisation 3 – Joint Public-Private Venture

In O3, various characteristics are generated from the nature of contract which facilitate the development of a shared culture. Furthermore, the procedures for developing such a culture are not established. Within the BTO agreements, parties have common goals to achieve, established organisational structure and clear leadership roles and responsibilities. An integrated team environment is naturally developed and business cooperation significantly creates trust between key people, because if the project fails everyone will be affected. Trust

increases confidence, commitment, respect and transparency in the relationship (Ngowi, 2007). All parties adopt the project identity, joint-venture, which is based on cooperation values. Partners are a team and they must work this way in order to satisfy their individual interests. They join together in one environment according to know-how criteria. Therefore, support, help, communication, understanding and openness are key cultural behaviours for them. Hence, every project context or organisation needs to identify its own focus points, with regard to cultural aspects which improve its operational activities, and develop these effectively, to ensure expected results from professionals and other individuals who are the main cultural drivers.

8.2.3.6 Theme F – Internal and External Communication

8.2.3.6.1 New Concept: Organisation 1 – Private Ownership Structure

In O1 significant communication lines need to be established and huge volumes of information should be shared. The in-house project team, framework partners and other external stakeholders are working within the same business environment in order to deliver various products and provide different services. Individual organisations have their own strategy and method of communication when conducting their specific business tasks in O1's specific airport context. However, once they agree to collaborate and support each other at various organisational levels, to achieve various common goals through numerous project packages and a large number of associated information instruments, establishing effective communication structure becomes a fundamental concern. This is because they want to provide effective practices of communication and superior management operation, which ensure understanding and successful completion of projects (Perumal and Abu Bakar, 2011). Indeed, they have realised that a successful project is all about communication and acted accordingly through assigning communication specialists. These specialists have changed the method of communication that has been in use for over 20 years. Thus, three levels of communication have been identified and various systems adopted. They have considered a project's official and less formal team communication and information that needs to be shared with airlines stakeholders and other external parties during the different project stages. The PMO (Project Management Office), an established department, is responsible for managing all communication-related activities. Furthermore, as the research literature

suggests, communication is one of the most important success factors in construction, and O1's senior project managers must ensure that all communication instruments are managed, logged, controlled and stored. Indeed, information follows different directions and includes people within an organisation who are not associated with construction activities. Hence, all levels are linked and they are aware of organisation business, which significantly increases all parties' sense of belonging, commitment level and transparency and this, in turn, positively affects their performance.

8.2.3.6.2 New Concept: Organisation 2 – Public Ownership Structure

O2 has adopted a hierarchal structure of communication and follows a traditional way of dealing with project communication instruments. An effective method of communication is lacking, as all official correspondence with either internal or external bodies is in the form of letters. Most senior project managers agree that inefficiency arises from adopting such an approach, and, therefore, tried to implement other methods in their project experiences. However, ultimately, they must follow an organisation's approved communication procedures and ensure all project documents are available in written format, so that the DCC (Document Control Centre) can store project documents. As a consequence, a huge number of data hard copies result and a time consuming process associated with data retrieval activity. Misunderstanding of issues and delays in the procurement of materials in O2's several projects could be avoided with the proper conduct of communication strategies, as Bender and Septelka (2002) proposed. Indeed, these kinds of issue may considerably increase project cost and negatively affect participants' performance. Therefore, the government owner and senior project managers should properly consider this crucial issue to enhance a business operation.

8.2.3.6.3 New Concept: Organisation 3 – Joint Public-Private Venture

During early project stages, O3 considered all key internal and external parties involved in construction project activities in terms of different strategies linked to communication and share project information. This included the project owner, client, joint-venture project team, external subcontractors and suppliers. Various methods were approved to share effectively

information between various project parties, and the documents control system established to build an electronic project database in which information can be stored and retrieved. As each organisation of the joint-venture project team has unique communication methods, the best methods and systems were confirmed and adopted according to know-how approach and related project benefits. Openness, transparency and commitment are the main aims to achieve successfully common goals; accordingly, an open and clear communication environment is a priority for the project team, which is achieved through developing proper communication strategies at an early stage of the project (Perumal and Abu Bakar, 2011).

8.2.3.7 Theme G – Stakeholders Development Strategy

8.2.3.7.1 New Concept: Organisation 1 – Private Ownership Structure

Capturing knowledge, through lessons learned activities, and individual development at all organisational levels, is key in O1. An established department, personal development group, develops most sessions and training arrangements. It organises a technical and personal development programme for individuals based on their roles and personal needs, which can be distinguished through a structured testing approach. In addition to this, the organisation's regulations on various behaviours are delivered to internal and external people following compulsory sessions and workshop events. Project contract, project scope, project values, people relations, leadership skills and safety behaviours are the main focus areas. Most people involved in these arrangements have worked in different project programmes for several years according to contract agreements. Hence, a continuous improvement integrated plan, at all organisational levels, is expected to affect positively people's attitudes, skills, competences and motivations and to ensure an effective working environment throughout the quinquennium plan period (Chow and Liu, 2009; Dainty *et al.*, 2000). Lessons learned by all organisation levels and key stakeholders can leverage various individuals and overall organisational performance through additional value and project achievements. These arrangements and additional methods increase the motivation levels of individuals and the organisation. In turn, they become more committed and perform more effectively, meaning that they play a crucial role in maintaining the organisation's competitiveness in a global business arena (Tabassi *et al.*, 2011).

8.2.3.7.2 New Concept: Organisation 2 – Public Ownership Structure

Numerous internal and external development opportunities are available in O2. This training is arranged for young local engineers working in various organisation departments. However, an established scheme that establishes individual development needs is unavailable; as a consequence, it is everyone's responsibility to decide and request such training from department heads. Accordingly, selected training may not satisfy individual roles and a project's required skills and competences, which significantly affects its efficiency level. Raiden *et al.* (2009) emphasised that the responsible department should play a fundamental role in developing the required training for people within the construction project through effective understanding of project requirements and individual needs. This is done so that development initiative benefits can be realised and supported. It was noted by O2's project managers that most upper managerial level members and external partners are highly skilful and expert people, which should explain the main reason for their lack of training. In fact, each project environment is different and bringing various people to work in the same place and achieve mutual goals requires particular competences (Sanchez and Blanco, 2014; Jabrouni *et al.*, 2011). At all organisation levels, knowledge, personal development and lessons learned are effective tools for continuously achieving better results and improving business operation. Consequently, being motivated to perform well depends on project managers' leadership characteristics and individual morale and commitment level.

8.2.3.7.3 New Concept: Organisation 3 – Joint Public-Private Venture

O3's joint-venture project is a fast track construction project, involving three different partners, to design, build and operate a totally new airport. Completing the project within its scheduled timeframe is a main success factor for all parties involved in the joint-venture agreement. These stakeholders have been joined together according to their various experiences needed to accomplish such mega projects. Required communication methods, leadership structure, relationship nature and project values and regulations were developed and agreed on at early project stages, when all partners sat together and discussed related matters. Any development required to accomplish successfully the project and, ultimately, start its operation, is organised and delivered to any project stakeholders whether project team members or external parties. Indeed, the temporary nature of such projects and the level of

professionalism required throughout the construction process may reduce the efficiency of the development strategy (Tabassi *et al.*, 2011). However, training sessions associated with project safety behaviours are a compulsory requirement for individuals participating in construction activities. Various financial and moral arrangements are also in place to ensure high individual motivation levels.

8.2.4 Open Questions – Questions H and I

Participants were asked to respond to two open questions (questions H and I). The first clarifies the reasoning behind their unsuccessful experiences and explains ineffective management practices that minimise chances of achieving project goals and success within an organisation. The latter seeks to prioritise an organisation's project success factors within airport construction business. The project managers' responses support the development of a research theoretical framework in terms of refining, modifying or restructuring framework themes and their components.

8.2.4.1 Question H – Unsuccessful Project Experience

Table 8.2: Open Question (H) Responses

Open Question 1: Reasons behind participants' unsuccessful project experience		
Organization 1: Private Airport Operator		
Participant	Direct Quotes from Participants	Framework Theme/Sub-theme and <i>Emergent Theme</i>
<i>OIP1</i>	- "The scope was not very well defined." - "The team was not very well defined."	- (Project Team Formulation and Project Team Strategy). - (Project Team Formulation/Project Team Design).
<i>OIP2</i>	- "About relation ... You need to manage people."	- (Stakeholders Engagement).
<i>OIP3</i>	- "Unrealistic goals ... Unrealistic timeframe."	- (Project Team Strategy/Project Objectives).
<i>OIP4</i>	- "Overly optimistic in terms of what we can build and how quickly it will take."	- (Project Team Formulation and Project Team Strategy/Project Goals and Objectives).

<i>OIP5</i>	- “Combination of not having a clear owner on it ... Stakeholders not having defined enough inputs.”	- (Project Team Formulation and Project Team Strategy/Project Goals and Objectives).
<i>OIP6</i>	- “No clear definition of requirements.” - “We got unrealistic time scale.” - “Do not have a good team ... The right people at the right role.”	- (Stakeholders Engagement/Stakeholders Information Management). - (Project Team Strategy/ Project Objectives). - (Project Team Formulation/Project Team Design).
<i>OIP7</i>	- “There was not a clear brief at the beginning of the project.” - “There was no clear leadership at a high level.”	- (Project Team Formulation and Project Team Strategy/Project Goals and Objectives). - (Leadership Structure/Leadership Type).
<i>OIP8</i>	- “A bit relationship things.”	- (Project Culture/ Relationship Values).
<i>OIP9</i>	- “We had not defined the scope.” - “We have risks that we could not define.”	- (Project Team Formulation and Project Team Strategy/Project Goals and Objectives). - (Project Team Formulation/Problem Solving)
<i>OIP10</i>	- “You have got the right people in the job.” - “Know and understand your scope.”	- (Project Team Formulation/Project Team Design). - (Project Team Formulation and Project Team Strategy/Project Goals and Objectives)
Organization 2: Public Airport Operator		
<i>O2P2</i>	- “The team was not well developed.” - “Changing the entire team at the middle of the project life cycle.”	- (Project Team Formulation/Project Team Design). - (Project Team Strategy/Team Trust).
<i>O2P3</i>	- “We have discovered that the same project is designing by another party ... lack of confidence and trust about the in-house team ... That was a real disappointed for us as a project team.”	- (Project Team Formulation/ Project Team Design).
<i>O2P4</i>	- “Bureaucracy in our business operation.” - “Engineer needs to have trainings, look at the advanced technologies, attend different	- (Leadership Structure/Empowerment Degree). - (Stakeholders Development Strategy/Training Method).

	expeditions and conferences and get promoted, all that in a regular basis.” - “Some departments are centralized and others are isolated.”	- (Project Team Strategy/Team Interdependency).
<i>O2P5</i>	- “Unqualified/bad contractor or consultant this would be a reason of failure.”	- (Project Team Formulation/Project Team Design).
<i>O2P6</i>	- “So many stakeholders who had different views.” - “Should not give it to a contractor around the finishing stage ... They should do that much earlier ... At the last minute they change everything.”	- (Stakeholders Engagement/Stakeholders Information Management). - (Project Team Strategy/Team Trust).
<i>O2P7</i>	“Somebody misleads you with the information can affect your project.” - “Lack of skills in particular area might lead to unsuccessful experience.” - “Team who is not motivated ... Have not got interest in the area.” - “If your boss is also negative and not supported.”	- (Stakeholders Engagement/Stakeholder Information Management). - (Stakeholders Development Strategy/Training Method). - (Stakeholders Development Strategy/Motivation Method). - (Project Team Strategy/Team Enthusiasm).
<i>O2P8</i>	- “The owner was not quite honest with project team.” - “In a public organization like this one there are many stakeholders working with and against each other.” - “The different interests on the project.” - “Lack of accountability.”	- (Project Culture/Relationship Values). - (Stakeholders Engagement/Stakeholders Meetings and Stakeholders Information Management). - (Project Team Strategy/Team Cohesiveness). - (Project Team Formulation/Project Team Design).
<i>O2P9</i>	- “Assigning one contractor to numerous packages of developing a new airport ... Putting all the risk in one basket ... Not the right disciplines, specialities at the right place.”	- (Project Team Formulation/Project Team Design).
<i>O2P10</i>	- “Duplicated roles and responsibilities within project team members I think.”	- (Project Team Formulation/Project Team Design).
Organization 3: Private and Public Airport Operator		

<i>O3P1</i>	- “The interference or conflict of interests.”	- (Project Team Strategy/Team Cohesiveness).
<i>O3P2</i>	<p>- “Nobody can make decision ... Time of getting approval from the main office take so long time.”</p> <p>- “The attitude of managers is not positive.”</p> <p>- “They do not have appreciation for achievements or jobs you doing.”</p> <p>- “Do not get any type of incentives.”</p> <p>- “People intend to have power in one hand only bureaucracy.”</p>	<p>- (Project Team Formulation/Project Support).</p> <p>- (Project Team Strategy/Team Enthusiasm).</p> <p>- (Project Team Strategy/Team Enthusiasm).</p> <p>- (Stakeholders Engagement/Incentives).</p> <p>- (Leadership Structure/Empowerment Degree)</p>
<i>O3P4</i>	<p>- “Unsuccessful experiences made many good experiences for future works ... It is learning.”</p> <p>- “Miss selection of subcontractors and the selection of team members.”</p>	<p>- (<u>Learning Cycle</u>)</p> <p>- (Project Team Formulation/Project Team Design).</p>
<i>O3P5</i>	- “Unclear design or specification ... Continues requests or requirements from the employer or client to change the design during the project ... The client vision was not clear.”	- (Project Team Strategy/Project Objectives).
<i>O3P6</i>	<p>- “Bad management behaviours.”</p> <p>- “Poor selection of project team.”</p> <p>- “And their working strategy.”</p>	<p>- (Project Culture).</p> <p>- (Project Team Formulation/Project Team Design).</p> <p>- (Project Team Strategy).</p>
<i>O3P7</i>	<p>- “What need to be done is not clear for all parties.”</p> <p>- “Inefficient communication method between project’s parties.”</p> <p>- “Isolated departments.”</p>	<p>- (Project team Strategy/Project Objectives).</p> <p>- (Communication/Communication Strategy).</p> <p>- (Project Team Strategy/Team Interdependency).</p>
<i>O3P8</i>	- “When you do not maintain a unique standard for everybody, same standard treatment for all.”	- (Project Culture).
<i>O3P9</i>	- “Subcontractor management were hiding that they are not capable to do the project.”	- (Project Culture/Relationship Values).

8.2.4.2 Question I – Success and Failure Terms

Table 8.3: Open Question (I) Responses

Open Question 2: participants' evaluation of the term 'success' or 'failure' in chosen project experiences	
Organization 1: Private Airport Operator	
Participant	Direct Quotes from Participants
<i>OIP1</i>	<p>- "It is about benefits ... What is your expectation at the beginning and the end ... Delivered under budget, under time."</p> <p>- "It depends on stakeholders really, so for shareholders they would say cost, for the airlines it would probably be time, from operation point of view scheduled timeframe would it be the most critical. Airlines do not want us to spend money that we not going to earn money on."</p>
<i>OIP2</i>	- "On budget, on time, customer satisfaction, all the formal stuff ... Did I enjoy, would I do it again, did the people enjoy it."
<i>OIP3</i>	- "Quite often you evaluate it on time, If you have not hit the time things then failed ... You can get additional money if you need it to save time."
<i>OIP4</i>	- "Everyone sticks to quality ... Cost and programme will flex in priority depending on the circumstances."
<i>OIP5</i>	- The time was the key thing.
<i>OIP6</i>	<p>- "If you get the quality right, you get it on time and you get it to cost."</p> <p>- "Cost can be flexible ... Time depends on what you trying to deliver ... Safety number one and you get everything else right."</p>
<i>OIP7</i>	<p>- "The main targets reached (time, quality and cost) ... Was it a happy team? ... It is giving benefits to owner."</p> <p>- "Often time really ... To some degree cost is a consequences of time ... That is a consequences of quality so if you things right first time, then it is going to take less time and that will cost you less."</p>
<i>OIP8</i>	<p>- "We finish the runway and get it opened by the end of September if not earlier."</p> <p>- "Money does not matter ... It is more important that we get the runway working and that is the success ... Money is not massive, with all airlines ... Prefer lost money than not planning a disaster."</p> <p>- "More about the business model, where you make money."</p>
<i>OIP9</i>	- "It is really about the benefit actually ... Success is based upon how much money we going to save per year."
<i>OIP10</i>	<p>- "I don't like being late in my job ... If it cost hundred thousand more, I need to trade off and do the right thing with conversations with stakeholders ... My nature is to deliver on time ... the cost side of thing, the way we regulated you get return on it ... so, success is time, cost and quality."</p> <p>- "My view of project success ... It is about delivering the benefits ... Delivering on time ... and it is about the steps of delivering the benefits as well."</p>
Organization 2: Public Airport Operator	
<i>O2P2</i>	- "The cost of the project, they are not that much careful about it."

	Number 1 is time, 2 the cost of the project, 3rd quality of the product and then safety.”
<i>O2P3</i>	- “I think cost is getting more importance recently ... Quality and safety are so important ... Time is not a big deal even in most of public projects ... I do not remember a project that has finished in its schedule timeframe.”
<i>O2P4</i>	- “Cost becomes very important.”
<i>O2P5</i>	- “Completing the project on time, good quality ... The last factor is the safety ... Time and quality at the same level.” - “The cost you already accepted from the beginning from the contractor ... If it our fault we back anything up, so we pay the additional expenses.”
<i>O2P6</i>	- “Budget I would say, then comes quality and then time ... Here time is not important.”
<i>O2P7</i>	- “Depends on the stakeholders ... Contribution of people in the project ... People who are not delivering on time ... Budget is important.”
<i>O2P8</i>	- “Finish the project on time, and within the estimated budget.” - “The success and failure has a lot to do with accountability.”
<i>O2P9</i>	- “Accomplishing the project according to the agreed quality and specifications and on its time ... First priority is giving to quality ... As the budget is to be defined at the early stages ... That why cost is not at the top.” - “Quality, safety, time and then budget.”
<i>O2P10</i>	- “Completing the project on time with agreed specifications.” - “Cost is so important ... safety should be ... I do not think they care about time.”
Organization 3: Private and Public Airport Operator	
<i>O3P1</i>	- “Airport project success is managing many stakeholders along with the interference between them, this is one of the most important things in airport construction business.” - “Many stakeholders with many requirements ... Every stakeholder wants to get their own requirements ... You need to well coordinate between them to provide the harmony and understanding.” - “Time is the major important for us, as we have to finish as soon as possible and start operation in order to pay the lenders and have income ... Quality is also very important as we are going to operate the airport for 25 years” - “Safety is number one in my opinion.”
<i>O3P2</i>	- “Success is making profit from the project ... Manage to deliver the project on time and within budget ... Failure is the result of bad behaviours.” - “Quality is first then time ... Our concern in this project is quality, because we are going to run the project for 25 years ... Quality, safety and time ... Budget we are doing very well in finishing the project within budget.”
<i>O3P3</i>	- “You accomplish your job at a given time with normal effort.” - “Quality and time are always the first priority for us ... Safety and cost then.”
<i>O3P4</i>	- “First is always the safety following by quality and then the time scheduled.” - “For this project time and quality are the first priority, because another part of (..) the CM will involve later in the operation ... Then safety is the third one.”

<i>O3P5</i>	- “Quality and time are not tolerable ... Safety comes next and the cost is the last priority.” - “Reputation and professionalism on quality and time.”
<i>O3P6</i>	- “Mainly time and quality.” - “They believe if they are going to hand over this project early even with extra cost ... Time and quality will be at the same level and then the safety and cost comes.”
<i>O3P7</i>	- “Time and quality got the most priority.”
<i>O3P8</i>	- “Safety is first ... Second thing is time and quality ... last thing is cost or money.” - “If the first things (safety, time and quality) are there the third one (cost) will come automatically.”
<i>O3P9</i>	- “Time and quality is number 1, at the same time they are not scarifying the safety ... Cost is the last factor.”

8.2.5 Cross-Case Analysis

The researcher collected multiple accounts of common management experiences in airport construction business. However, each individual account of experience had in its own context. The ability to illuminate the particulars of human experience is one of the great strengths of qualitative research (Stake, 1995). Ayres *et al.* (2003: 880) argued that “qualitative analysis depends on the identification of key elements in the phenomenon under investigation.” These key elements in the data are recognised by themes developed early in this study. As a result, previous sections have provided in-depth interpretations and detailed information regarding each case in terms of research proposed framework themes and their components.

Investigation process is based on the successful project experiences of senior project managers who participated in the study. Previous processes of data analysis only address operators’ practices independently. For this reason, an analysis of the differences and similarities across cases, as shown in Table 8.4, is essential, in order to confirm or adjust framework components. This inference process is supported by data making connection process and associated new concepts in Section 8.2.3. By developing this analysis, the extent to which an organisation is fulfilling framework components can be evaluated and examined. Thus, in this respect, variations of an organisation’s management performance can be

realised, which can be an indicator of the relation between ownership structure and efficiency of construction management practices.

Table 8.4: Cross Cases Analysis

Context Theme	Organization 1 Private Airport Operator	Organization 2 Public Airport Operator	Organization 3 Private and Public Airport Operator
Theme 1 Project Team Formulation	Organized and Structured (Integrated Project Team) - Project team includes various organizations that have various obligations at different project levels.	Varied in each project (No clear structure)	Organized and Structured (Integrated Construction Team) - Project team is established form organizations that awarded the contract, international construction manager (CM) and local contractor with equal shares percentage.
Theme 2 Project Team Strategy	Team Work Strategy - Implemented at different project levels through sharing project activities, meetings, workshops and presentations' arrangements, etc.	No clear structure - Initiatives by project managers.	Team Work Strategy - Between department heads through meetings. - When needed at operational level through sharing project activities and workshops' arrangements, etc.
Theme 3 Stakeholders Engagement	Project manager responsibility - Fully implemented through organization official arrangements.	Assigned coordinator responsibility - A coordinator is assigned by project manager or airport administration. - No official direct relations between internal project team and external parties which is requested by a project manager in some projects.	Client organization responsibility - Stakeholders' engagement process is based on cooperation activities between project client and project team director. - No official direct relations between internal project team and external parties as all requirements are clear and agreed prior

			to delivery stage, at early project stages.
Theme 4 Leadership Structure	Shared leadership structure - Based on know-how approach (knowledge or skill required).	Hierarchical leadership Structure	Shared leadership structure - Based on know-how approach (knowledge or skill required).
Theme 5 Project Culture	Strong Culture within Organization Level - Individuals and stakeholders involved in any project must understand and adopt organizational culture which is under development stage.	No clear project/organization culture - Project culture may be developed by project manager as personal working style.	Clear Culture within Project Level - Project culture and its values are developed within joint-venture agreement and everyone must act accordingly.
Theme 6 Internal and external Communication	Effective, structured and organized communication strategy	Ineffective communication strategy	Effective, structured and organized communication strategy
Theme 7 Stakeholders Development Strategy	At all organization levels - Organization and individuals are both responsible for continuous development plans. - Most stakeholders engaged in development plans.	At operational level (local young engineers) Numerous development opportunities are available for local engineers, but access is based on individuals' desire along with upper managerial level approval.	Available when needed - Most development programmes occur at individual organization context, outside joint-venture agreement. - Experts and professional individuals are major requirement in the BOT contract agreement.

Interestingly, the most successful projects nominated are current or recent experiences of project managers, as shown in Table 8.5, which is indicative of the best existing practices of project and stakeholder management strategies within each organisational context in terms of the research proposed framework. However, continuous improvement of management strategies is highly recommended by management specialists and researchers, as discussed in the literature review chapter, in order to ensure effective mode of project management and

controlling practices and improved productivity and effectiveness. The literature has suggested, as explained in Section 6.4, that an analysis process including understanding an environment and previous experiences, particularly, recognising a problem's causes, is required to identify improvement areas. With this in mind, acknowledging unsuccessful experiences of study participants can indicate where an organisation's management practices went wrong in relation to the defined themes characteristics. Consequently, an integrated insight into past and current experiences significantly supports confirmation and/or modification procedure of the research theoretical framework. The researcher, in view of this, has attempted to demonstrate the rationales for an entire project failure, part of it or period of bad management experiences in each organisation context as shown in Figure 8.9. This was realised following the responses of participants to open question 'H' in previous Section 8.2.4.

Table 8.5: *Construction/Completion Date of Participants' Successful Experiences*

Successful experiences	
Participants	Direct Quotes from Participants
OIP1	"It was probably about 18 months ago."
OIP2	"It was six months ago."
OIP3	Unknown
OIP4	"The current one, the project has been going since 2011."
OIP5	"A very good project was one I did last year 2012."
OIP6	"My successful project which was pack in 2001."
OIP7	"The successful project that I did was number of years ago."
OIP8	"It was about ten years ago."
OIP9	"It is actually my current one."
OIP10	"A new Terminal here at (..) the airport ... this project has just finished."
O2P1	Unknown
O2P2	"At that particular time 15 years ago."
O2P3	"The project is redevelopment of runways of new (..) the airport."
O2P4	"I am talking about 15 to 20 years."
O2P5	"A good project which I involved in is a development of 7 runways project, lately completed and was a successful experience."

<i>O2P6</i>	“The project I have chosen is the nearly completion design of new (..) the airport.”
<i>O2P7</i>	“It is the most active project which is undergoing.”
<i>O2P8</i>	“We have just almost completed a project, the title of it is new (..) airport airfield facilities upgrade project.”
<i>O2P9</i>	“It is the new (..) the airport project.”
<i>O2P10</i>	“The new development of (..) airport project.”
<i>O3P1</i>	“Operate, develop and construct the new (..) airport.”
<i>O3P2</i>	“My chosen project is new (..) Airport project.”
<i>O3P3</i>	“I will be talking about this project (..) airport.”
<i>O3P4</i>	“The new (..) airport project.”
<i>O3P5</i>	“My chosen project is (..) international airport project about 5 years ago.”
<i>O3P6</i>	“My chosen project is new (..) airport project.”
<i>O3P7</i>	“It will be this project new (..) international airport.”
<i>O3P8</i>	“New (..) airport project.”
<i>O3P9</i>	“My chosen project is new (..) airport project.”
<i>O3P10</i>	Unknown

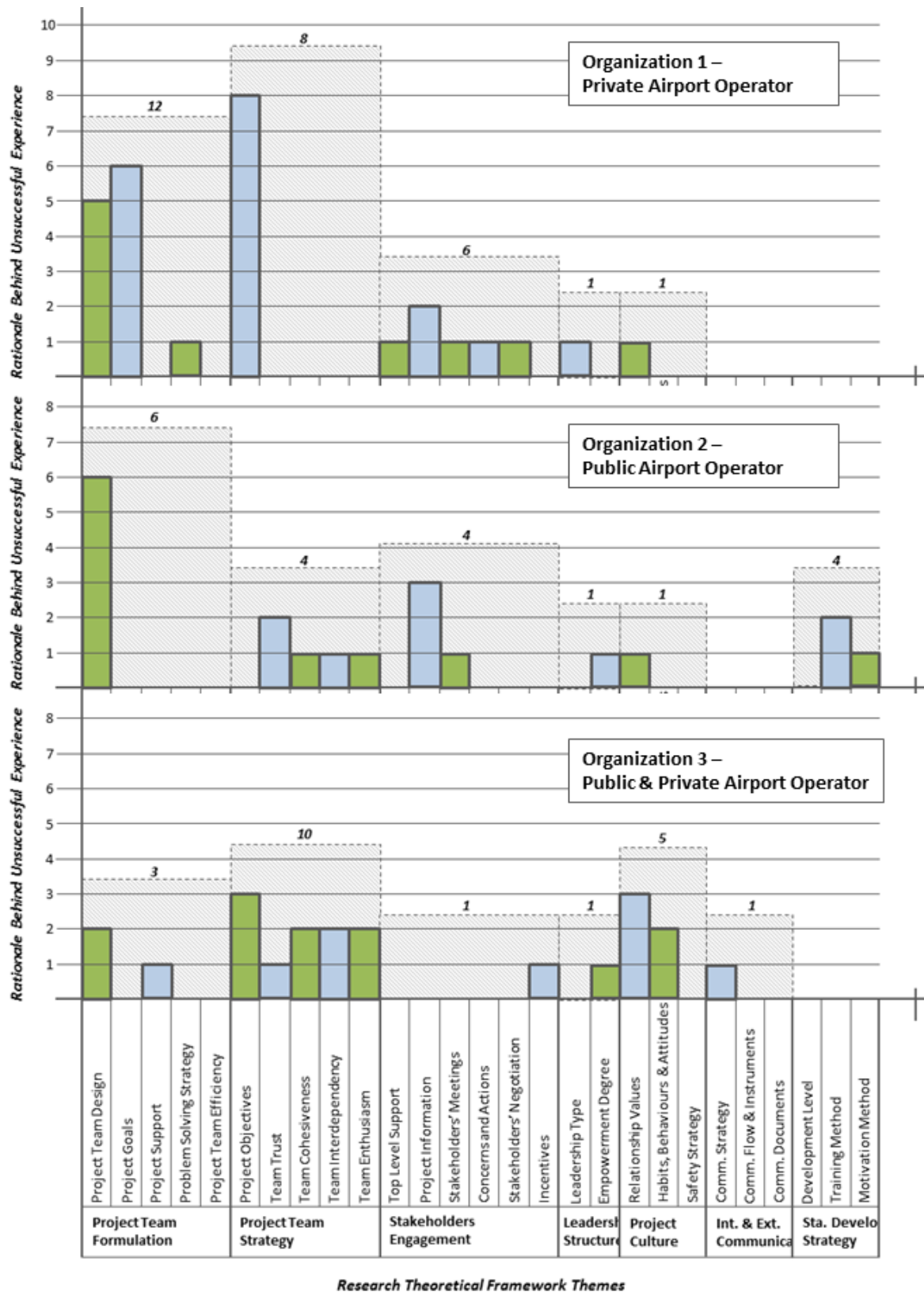


Figure 8.9: Reasoning behind Participants' Unsuccessful Experiences

The basic criteria for project success were identified by Atkinson (1999) as forming an ‘iron triangle’, which includes time, cost and quality. Indeed, these values have been discussed by most researchers who investigated the concept of project success (Chan and Chan, 2004). The open question ‘I’ seeks to prioritise these objectives from an organisation’s perspective through participants’ experiences. The safety factor should be also included in the investigation as suggested by Pocock *et al.* (1996), since its significant importance in construction business and high association with the human factor, legislation and financial issues.

Despite the nature of procurement routes in various airport organisations, numerous actors take part in the process. Owner, clients, owner/client representatives, consultants, technical experts, architects, contractors, sub-contractors, airlines, government departments and various users are involved. The definition of success of each party is mainly linked to the achieved results, particularly, delivering the benefits which change from project to project. In the airport construction business, as in any other business, the success of a project relates to client satisfaction as shown in Figure 8.10, including agreed goals and objectives. In research study cases, the airport holding organisation responsible for management, planning and development activities represents the client organisation in the construction business. Thus, it is of importance to understand clearly who the client is, especially when the client is a group of people guided often by distinct interests, conflicting values and time perspectives. Hence, the ownership structure of different airports plays a significant role in the selection of success criteria priorities.

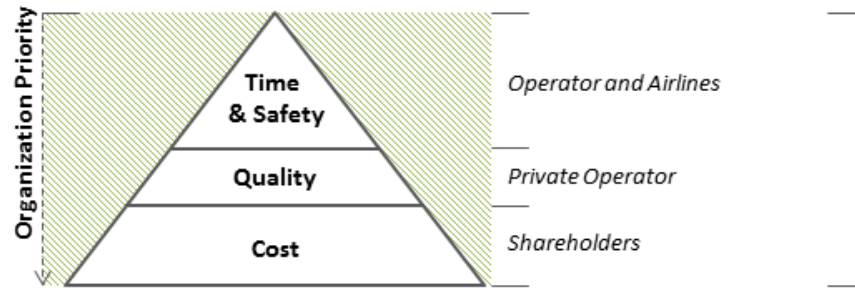
In organisation 1’s regulated management framework, safety procedures are of major concern and are a priority among various projects. Safety is a parameter to measure the success of projects where no one is hurt during the project delivery stage. An organisation believes that if managers and workers adopt the correct safety procedures, they will deliver the project on time and ensure that quality is maintained. However, at the post-delivery stage, success is based on delivering benefits, in particular, how much money airlines and other shareholders will save each year. Accordingly, time factor is frequently viewed as a top priority due to the fact that delay in planned schedules may contribute to unexpected consequences. Moreover,

management effort and effective management practices will help to control project budget and ensure quality. As a result, additional money is always an option when delay associated with planned schedule is the main concern.

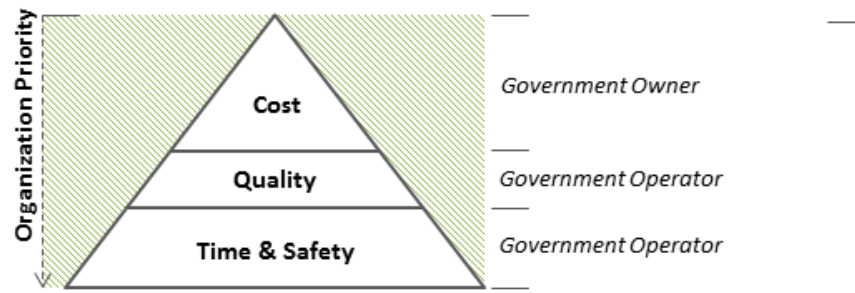
The government owner, organisation 2, has been increasingly concerned with project cost. Yet, there is little evidence of projects accomplished within the scheduled timeframe. In addition to this, safety procedures are neglected and not given priority. With project delays and safety misconduct, cost overruns and further legislation and financial issues will become more obvious, principle factors leading to the high cost of a construction project.

Following the BOT agreement in the joint venture project, organisation 3, both construction team parties will participate in future airport operations. Therefore, completing the project on time and producing the expected quality are vital success indicators. All partners benefit from early airport operation, therefore, they perceive the time factor as a priority. Project quality is also a major goal for joint venture parties. The current construction project team will strive to integrate all functions and processes and to achieve expected products and service quality, in order to facilitate their future operational role. Thus, through the joint-venture team's know-how, the government owner can reduce construction costs and scheduled timeframe along with improving airport operating efficiency.

Organization 1 – Private Airport Operator



Organization 2 – Public Airport Operator



Organization 3 – Private and Public Airport Operator

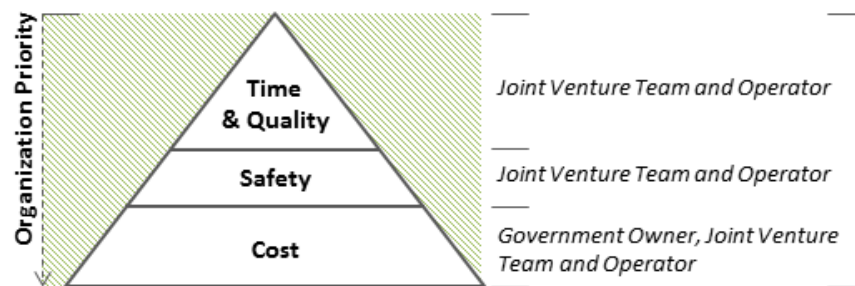


Figure 8.10: Organisation Indicators for Measuring Projects Success

8.3 Research Theoretical Framework Validation

As explained in Section 7.14, three lens of validating research theoretical framework have considered in following sections.

8.3.1 The Lens of the Researcher

Conducting and reporting the literature review was a fundamental process to situate the research project within its field including the wider academic community. This helped the researcher to understand and critically analyse the construction industry, in terms of managing project planning and organising processes, and controlling and motivating project procedures and resources. The process of reviewing the literature identified a research gap, which this study attempted to address. The researcher's awareness of management misapplication practices has narrowed the study focus to strategic management studies within project and human-related context. Following this, attention was paid to studies directly related to research specific investigation, airport business, in particular, the construction management activities of airport projects.

The previous approach helped build the researcher's solid knowledge of a broad research context as well as studies which overlap with this project and are associated with the particular investigation. It has also grouped relevant research into topics designed to address the research gap. Thus, various themes have established the proposed research theoretical framework. However, throughout the data collection stage, including numerous conversations with different participants from real practice settings, the researcher was able to determine areas of agreement and developed a deeper understanding of how professionals view the issue. Indeed, the literature review, data interpretation, explanation process and the sense-making process indicate research framework validity.

In terms of paradigm assumption, triangulation procedure is suggested for implementation in the post-positivist paradigm, which is the philosophical assumption of this research (Creswell and Miller, 2000). Crossan (2003) argued that from a post-positivism view, reality concept is highly associated with the human mind. People view the real world from different perspectives, which depends on its numerous contexts. Post-positivists, therefore, believe

that error must be included in all observations and theories, which are ultimately fallible and revisable (Trochim, 2000). In contrast, positivism philosophy encourages that only the world aspects which researchers can be certain about should be studied by science. However, due to the characteristics of post-positivism, triangulation method has emerged in social science to strengthen the reliability and validity of research. Creswell and Miller (2000: 126) defined triangulation as “a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study.” According to Denzin (1978), triangulation in research design and method has four different perspectives: across data sources, methods or theories, and among investigators.

Data triangulation represents the process of retrieving data from various sources with similar subject of interest. Methodological triangulation refers to gathering data by using multiple methods, whether within-method or between-method. The former uses the same method in different contexts, and the latter involves the use of different methods with the same study context. The third perspective, theory triangulation, is associated with providing alternative explanations for a single set of data. Finally, investigator triangulation involves the observation of the same problem by using more than one investigator (Denzin, 1978).

In this research project, from a post-positivism viewpoint, triangulation approach will be applied in terms of data sources. Indeed, several factors have determined this choice. On account of the nature of the research being undertaken, there is little published data on airport construction and a remarkable lack of studies investigating construction management practices in airport business. In addition, there are research project time constraints and associated milestone goals. Moreover, with regard to the research, it was conducted by a single researcher and no other investigators participated in the entire research journey.

Data Triangulation

A single source of data may minimise the reliability level of any research. To minimise errors, data source triangulation was employed to develop a research theoretical framework based on theoretical analysis and empirical study (Creswell and Miller, 2000). Two main sources of data were used in this research project, primary and secondary. Secondary data

were used for an initial understanding of subjects of interest, to expand the researcher's knowledge of relevant issues, identify context problems and develop its solutions. This was achieved through the desk study technique, which involved various published sources, including text books, journal papers, company documents, project reports and visual materials. In order to reflect fairly the real practices and evaluate the framework after its development phase, fieldwork technique was adopted through conducting a semi-standardised interview. This technique represents the primary source of data; understanding various management strategies associated with airport construction projects was crucial to soliciting the views and experiences of key construction personnel.

Hence, in order to develop a theoretical framework which was not only based on the literature study, empirical data were gathered. Data from interviews in the three organisations (1, 2 and 3), which operate under different forms of ownership structures, were analysed. As a result, the evolved framework benefited from both empirical and theory input. The integrated work conducted throughout the research journey including its various phases revealed the significant potential of the triangulation approach in providing the researcher with comprehensive results that are more objective and can be applied in the field.

8.3.2 The Lens of the Study Participants

This lens shifts the validity process from the researcher to individuals external to the research who participated in the study. The researcher has adopted this viewpoint to determine the accuracy of the realities of study participants, airport senior project managers, presented in the research proposed theoretical framework. Creswell and Miller (2000) stated that establishing credibility through research participants' involvement is the primary lens for validation. Various procedures have been developed to facilitate this technique under different paradigm assumptions, member checking, prolonged engagement in the field and collaboration. However, Lincoln and Guba (1985: 314) described member checking as "the most crucial technique for establishing credibility." Equally, for post-positivists, member checking is the appropriate validation procedure (Creswell and Miller, 2000). In consideration of this, member checking is the adopted technique in this research project.

Member Checking

Several procedures are available to researchers to implement this process. Researchers' selections depend on the nature of their study and what they assume best suits their validation context (Creswell and Miller, 2000). For example, a focus group of participants can review study findings. Another strategy is to present raw data to participants in order to solicit their views on data accuracy, e.g. transcriptions, explanations or observations from field notes. Alternatively, investigators may request from participants to view a research project's themes or categories and decide whether they make sense, whether their development process is based on sufficient evidence and whether the overall form is solid and realistic.

In this research project, participants were asked to respond to an additional open question (question J), which enables the researcher to obtain further crucial information that facilitates the validation process of the proposed research framework. The question seeks to ensure that research framework components cover all vital management factors within research specific context and its related issues, and represent their reality. It also recognises effective management practices that increase chances of achieving project goals and providing an effective and efficient mode of business operation. This is achieved through linking project managers' responses to research framework themes and sub-themes, otherwise an emergent theme will be recognised. Thus, study participants add a vital level of validity and credibility to a research qualitative study. Indeed, project managers' lens presents a better validation of the proposed framework due to their level of expertise. The following Table 8.6 presents participants' views.

Table 8.6: *Open Question (J) Responses*

Open Question 3: Additional project or human-related strategic management factors		
Organization 1: Private Airport Operator		
Participant	Direct Quotes from Participants	Framework Theme/Sub-theme and <i>Emergent Theme</i>
<i>OIPI</i>	<p>"You kind of cover it."</p> <p>- "All about establishing clear goals ... Very clear what we wanted from the beginning."</p>	- (Project Team Formulation/Project Goals).

	<ul style="list-style-type: none"> - “Engaging and having good structures in place for managing stakeholders.” - “We have very effective procurement methods in terms of how we tender the work ... Supplier evaluation board type approach where we have technical assisters and commercial assessment.” - “A lot of synergy.” - “We take learning from previous incidence and make sure that we constantly learning.” 	<ul style="list-style-type: none"> - (Stakeholders Engagement/ Stakeholders Management). - (Project Team Formulation/Project Team Design). - (Project Team Strategy/Team Cohesiveness). - (<i>Lessons Learned</i>).
<i>OIP2</i>	<ul style="list-style-type: none"> - “Experience and knowledge.” - “Relationship, stakeholders’ environment and the more people you can ask question of, finding information from, find out who to ask for that information, it is absolutely essential for successful project.” 	<ul style="list-style-type: none"> - (Stakeholders Development Strategy). - (Stakeholders Engagement/Stakeholders Management)
<i>OIP3</i>	<ul style="list-style-type: none"> “I cannot think of anything other than things you already carried.” - “Managing the solution rather than managing the process.” - “Try to educate and manage the sponsors.” - “I encourage conversation around the table ... What can we learn from that past issue.” 	<ul style="list-style-type: none"> - (Project Team Formulation/Problem Solving Strategy). - (Stakeholders Development/Development Level). - (<i>Lessons Learned</i>).
<i>OIP4</i>	<ul style="list-style-type: none"> - “People have been able to overcome issues.” - “Influencing people skills.” - “You always look back and think how you can do things better.” - “Project team and ways we have bonded and formed.” - “Very much collaborative, workshop environment where issues are shared and discussed.” 	<ul style="list-style-type: none"> - (Stakeholders Engagement/Concerns and Actions). - (Stakeholders Development Strategy/Training Method). - (<i>Lessons Learned</i>). - (Project Team Formulation/Project Team Design). - (Project Team Strategy and Stakeholders Engagement).
<i>OIP5</i>	<ul style="list-style-type: none"> “What else we can put in here.” 	

	<p>- “Having the stakeholders too close to the project half way through the project.”</p> <p>- “A lesson learned session that we did after the project where I brought together some of the team and we went through all of these headings.”</p> <p>“We tried to pick up a lot of the positives ... A lot of these we have covered today.”</p>	<p>- (Stakeholders Engagement/Stakeholders Management).</p> <p>- (<i>Lessons Learned</i>).</p>
<i>OIP6</i>	<p>- “Pulling people at the right direction ... They understand objectives.”</p> <p>- “People feel that I got part to play in the success of the project.”</p> <p>- “Everyone understands what the role they play.”</p> <p>- “You have to be able to deal with those conversations, you need structure.”</p> <p>- “Being honest and open with people from the start.”</p>	<p>- (Project Team Strategy/Project Objectives).</p> <p>- (Project Team strategy/Team Trust).</p> <p>- (Project Team Formulation / Project Team Design).</p> <p>- (Communication/Communication Strategy)</p> <p>- (Project Culture/Relationship Values).</p>
<i>OIP7</i>	<p>- “Empowering of the project managers.”</p> <p>- “Clear understanding of what the owner wanted to get out of the project ... What the main stakeholders wanted.”</p> <p>- “I encourage people to share their learning and their enthusiasms for the work and that was right through all levels.”</p>	<p>- (Project Team Formulation/Project Support).</p> <p>- (Project Team Strategy/Project Objectives).</p> <p>- (<i>Lessons Learned</i>).</p>
<i>OIP8</i>	<p>- “I like to talk to people and get them to feel comfortable ... Transparency, open and honest communication.”</p> <p>- “Price them if they are doing something good.”</p>	<p>- (Project Culture/Relationship Values).</p> <p>- (Stakeholders Development Strategy/Motivation).</p>
<i>OIP9</i>	<p>- “Working with them.”</p> <p>- “Getting their respect.”</p> <p>- “Getting issues out on the table.”</p> <p>- “Openness.”</p>	<p>- (Project Team Strategy/ Team Interdependency).</p> <p>- (Project Culture/Relationship Values).</p> <p>- (Project Team Formulation/Problem Solving Strategy).</p> <p>- (Project Culture/Relationship Values).</p>

	- “Confidence that my manager has on me.”	- (Project Team Formulation/Project Support).
<i>OIP10</i>	<p>“The thing that in your mind and what you are writing about, we are not there yet ... But there are mechanisms we have got on place to the CEO as we go along ... It is quite interesting ... we will make it work, I am going to be positive as a director on this.”</p> <p>- “It is about location, setting together, the project team.”</p> <p>- “It is all about communication.”</p> <p>- “Have people who are steady ... Not changing people.”</p> <p>- “It is about the right information.”</p> <p>- “When things not right I need to do something quick.”</p> <p>- “I took a lot of learning on that from ... This is about success factors.”</p> <p>- “Put the learning in and all the problems ... Share learning.”</p>	<p>- (Project Team Strategy/Team Interdependency).</p> <p>- (Communication/Communication Strategies).</p> <p>- (Project Team Formulation/Project Team Design).</p> <p>- (Communication/Communication Flow and Instruments).</p> <p>- (Stakeholders Engagement/Concerns and Actions).</p> <p>- (<i>Lessons Learned</i>).</p> <p>- (<i>Lessons Learned</i>).</p>
Organization 2: Public Airport Operator		
<i>O2P2</i>	<p>- “Do not go to contractor office.”</p> <p>- “Never stop the work regardless of any situation, try to resolve the issue on site.”</p> <p>- “You should have the freedom to take, make, discuss any topic you wish too, free to bring ideas and solutions.”</p> <p>- “Discuss and consult among the team members.”</p>	<p>- (Project Culture/Relationship Values).</p> <p>- (Stakeholders Engagement/Concerns and Actions).</p> <p>- (Project Team Strategy/Team Ability and Willingness).</p> <p>- (Project Team Strategy/Nature of Project Activities).</p>
<i>O2P3</i>	- “Be up to date with new knowledge and advanced technology ... Focused really on young local engineers’ development.”	- (Stakeholders Development Strategy/Training Method).
<i>O2P4</i>	- “Giving the flexibility to the project manager, trust and authority to manage the project.”	- (Project Team Formulation Project Support).

<i>O2P5</i>	<ul style="list-style-type: none"> - “Solve issues effectively ... Taking decision in a short time really crucial in project success.” - “External people must be qualified and expert in their filed.” - “I had the freedom and was in charge of making most of project decisions without going back to upper managerial level which really help us in facilitating things and not delaying the project.” - “Project scheduled be always monitored, updated, revised and redesigned if any issue or changes happen.” 	<ul style="list-style-type: none"> - (Stakeholders Engagement/Concerns and Actions). - (Project Team Formulation/Project Team Design). - (Project Team Formulation/Project Support). - (Project Team Formulation and Project Team Strategy/Goals and Objectives).
<i>O2P6</i>	<ul style="list-style-type: none"> - “Project scheduled should be well developed by all parties and all should follow it.” 	<ul style="list-style-type: none"> - (Project Team Formulation and Project Team Strategy/Goals and Objectives).
<i>O2P7</i>	<ul style="list-style-type: none"> - “Good communication is one of the most important factors.” - “Share with them what we are doing is very important and keeping records up to date.” - “Project knowledge and skills of all parties involved.” 	<ul style="list-style-type: none"> - (Communication/Communication Strategies). - (Stakeholders Engagement/Project Information). - (Project Team Formulating and Stakeholders Development Strategy).
<i>O2P8</i>	<ul style="list-style-type: none"> - “I think cooperation.” - “Respecting each other.” 	<ul style="list-style-type: none"> - (Project Team Strategy/Team Interdependency). - (Project Culture/Relationship Values).
<i>O2P9</i>	<ul style="list-style-type: none"> “I do not think I can add more to what we were talking about.” - “I think politics factors should not involve in managing projects in terms of making decisions.” - “The assigned project team should have adequate power and authority when managing and supervising construction projects.” - “We tried to avoid different issues that we faced previously.” 	<ul style="list-style-type: none"> - (Leadership Structure/Leadership Type). - (Project Team Formulation/Project Support). - (<i>Lessons Learned</i>).
<i>O2P10</i>	<ul style="list-style-type: none"> - “Clear structure of leadership.” - “Clear definition of individuals’ obligations.” 	<ul style="list-style-type: none"> - (Leadership Structure/Leadership Type and Empowerment Degree). - (Project Team Formulation/Project Team Design).
Organization 3: Private and Public Airport Operator		

<i>O3P1</i>	<ul style="list-style-type: none"> - “Clearly know and understand project scope of work, what you have to do and what they have to do.” - “Being aware of all consequences if the project does not go well.” - “Being very accurate, truthful, devoted and honest in doing your task.” 	<ul style="list-style-type: none"> - (Project Team Formulation and Project Team Strategy/Project Goals and Objectives). - (Project Team Formulation/Project Goals). - (Project Culture/Relationship Values).
<i>O3P2</i>	<ul style="list-style-type: none"> - “I have explained to them how we do things right ... We should keep learning ... We share our experiences.” - “The management attitude, upper management level and sub-managerial level, they should be really positive.” - “Communication with people.” - “Building a positive team ... Technical experience, know-how.” - “Knowledge of the advanced technology in the market.” 	<ul style="list-style-type: none"> - (<i>Lessons Learned</i>). - (Project Team Strategy/Team Enthusiasm). - (Communication/Communication Strategies). - (Project Team Formulation/Project Team Design). - (Stakeholders Development Strategy/Training Method).
<i>O3P3</i>	<ul style="list-style-type: none"> - “Be open and truthful with everybody in every field you work in.” - “Working together ... What I want is success and what I always expect from them is success.” 	<ul style="list-style-type: none"> - (Project Culture/Relationship Values). - (Project Team Strategy/Team Interdependency).
<i>O3P4</i>	<ul style="list-style-type: none"> - “an unsuccessful experience made many good experiences for future works ... It is learning.” - “We have to adapt and solve problems very quickly.” - “In construction you may do something today and tomorrow you do something totally different, the first thing you must like the construction works and be committed to your tasks or you cannot manage the work You have to be open to learn.” - “People have to work as a team with good coordination and try to help each other.” - “And Communication.” 	<ul style="list-style-type: none"> - (<i>Lessons Learned</i>). - (Stakeholders Engagement/Concern and Actions). - (Stakeholders Development Strategy). - (Project Team Strategy/ Team Enthusiasm). - (Communication/Communication Strategies).
<i>O3P5</i>	<ul style="list-style-type: none"> - “The selection of project team is one of the most important factors.” 	<ul style="list-style-type: none"> - (Project Team Formulation/Project Team Design).

<i>O3P6</i>	<ul style="list-style-type: none"> - “The right management behaviours.” - “The right project team and resources.” - “Good decision maker.” 	<ul style="list-style-type: none"> - (Project Culture). - (Project Team Formulation/Project Team Design). - (Leadership Structure/Empowerment Degree).
<i>O3P7</i>	<ul style="list-style-type: none"> - “Design and specification must be very clear.” - “Communication between all departments.” - “Different department must set together regularly.” - The selection of subcontractors ... Providing good project team where expert and qualified people. - “I let them learn from my past experience.” 	<ul style="list-style-type: none"> - (Project Team Strategy/Project Objectives). - (Communication/Communication Strategies). - (Project Team Strategy/ Team Enthusiasm). - (Project Team Formulation/Project Team Design). - (<i>Lessons Learned</i>).
<i>O3P8</i>	<ul style="list-style-type: none"> - “First is commitment ... Respect of all people from all nationalities.” 	<ul style="list-style-type: none"> - (Project Culture/Relationship Values).
<i>O3P9</i>	<ul style="list-style-type: none"> - “The contract method or structure is the first factor.” - “Building the confidence for the client and showing our commitment in which we can do the job and deliver what he wants.” 	<ul style="list-style-type: none"> - (Project Team Formulation/Project Team Design). - (Project Culture/Relationship Values and Habits, Behaviours and Attitudes and Safety Strategy)

In order to visualise an integrated view of airport construction projects’ professionals with regard to fundamental project and human-related factors that contribute to provide effective management and controlling practices, the following Figure 8.11 was developed.

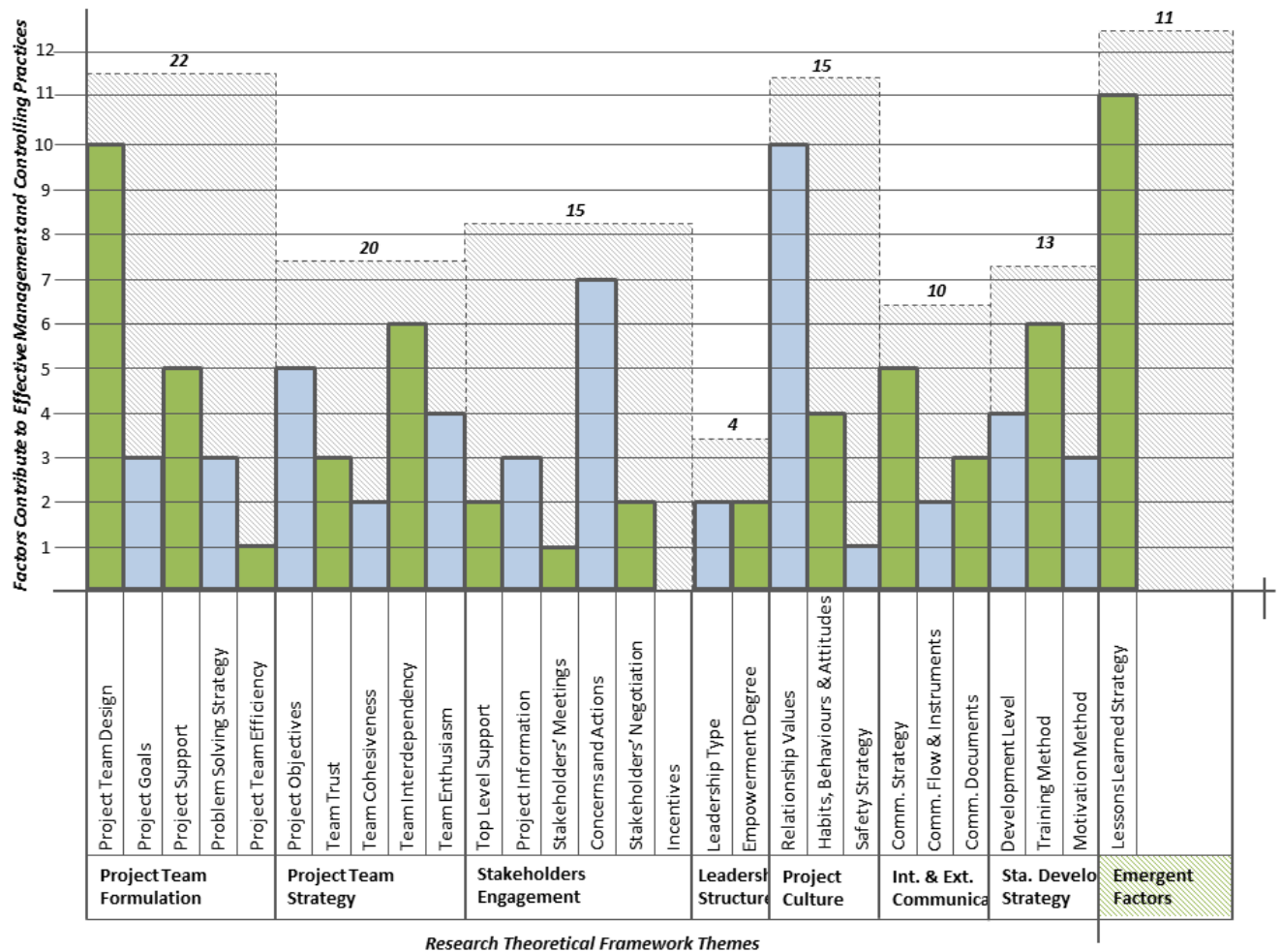


Figure 8.11: Factors Contribute to Effective Management and Controlling Practices

The above Figure 8.11 illustrates the perceptions of senior construction project managers regarding critical factors that provide effectiveness and efficiency to management and controlling practices. However, experts in the field have placed different levels of emphasis on framework themes and their sub-components, the seven different strategic aspects advocated as being valuable and fundamental and leading to project success. It is, therefore, important that airport construction projects are within the developed framework, which ensures there is focus on the overall strategic attributes. By applying the seven knowledge areas that the framework outlines within project management procedures, organisations can create an effective environment in which to leverage the potential benefits that occur from them. In particular, they can properly manage and control the progress of their projects and improve the chances of bringing them to a successful conclusion.

In terms of framework validation process, its integrated design can be realised from the following quotes, as indicated in Table 8.6. This validity should be taken into account.

- “You kind of cover it.”
- “I cannot think of anything other than things you already carried.”
- “What else we can put in here.”
- “We tried to pick up a lot of the positives ... A lot of these we have covered today.”
- “The thing that in your mind and what you are writing about, we are not there yet ... But there are mechanisms we have got on place to the CEO as we go along ... It is quite interesting ... We will make it work, I am going to be positive as a director on this.”
- “I do not think I can add more to what we were talking about.”

However, project managers consider project team formulation and project team design themes as being the most important foundations. Stakeholders’ engagement, project culture, stakeholders’ development strategies and internal and external communication have also received great attention. Leadership structure theme has not been neglected; instead, it has received some attention. Yet, reviewing the perceptions of project managers has led to identification of a key attribute which, notably, has been acknowledged by various project managers in all case study organisations. The identified strategic aspect is related to knowledge management, specifically, lessons learned approach. Its effective strategy has appeared to be a very powerful tool for improving the performance of future projects, which involves reflecting upon previous experiences whether associated with the mistakes or successes of projects. Hence, together these results provide important insights into the great role that the proposed research framework, including the emergent theme, can play in delivering strategic objectives and achieving success.

8.3.3 The Lens of People External to the Study

This process shifts the lens for establishing validity to a group of experts in the field, e.g., auditors or readers, whether formally brought into the research project or used by researchers to review their study (Lincoln and Guba, 1985). The basis of both review processes is to assess study accuracy, quality, credibility and novelty. The former is used in dissertations, PhD theses, academic journal papers, conference papers and other formal publications, particularly when internal and/or external committee members are assigned to study the documentation provided by researchers and write their reviews and comments. The latter involves individuals employed by the researcher for professional review purposes.

Throughout the research publication process in the *Journal of Advanced Management Science* (JOAMS), the research paper went through several stages. Following a first review process, the editors along with referees, who are experts in the field, offered some recommendations for improvements. The researcher then completed the required amendments and resubmitted the paper. Eventually, the editors and other reviewers accepted the paper after their feedback and comments. Thus, the process of reviewing the document by external editors, and final acceptance, adds credibility to the study (Creswell and Miller, 2000). However, it must be noted that the journal article did not cover the entire research content; instead, the development of the proposed research theoretical framework including its themes and sub-themes was the main focus.

Another level for establishing validity, from the lens of people external to the study, will be the viva-voce examination, which takes place in the final stages of the researcher's PhD programme, and involves internal and external experts. The systematic review of the document, followed by thesis defence, including outcomes, is a fundamental procedure for research study validity.

8.4 Theoretical Framework Evaluation and Refinement

The major aim of this study was to develop and confirm a theoretical framework that

enhances management practices performance of managing and controlling construction projects in an airport environment, and to explore how framework components affect the specific business operation. The development process of the research theoretical framework was achieved through combining existing theories associated with project and human-related strategies within the body of project management knowledge, and investigation processes of airport construction. In order to satisfy the study aim, the developed framework developed through a series of validation procedures, as shown in Section 8.3. However, in this section, the framework evaluation process in different study organisation contexts will be applied in order to offer useful recommendations for airport holding bodies. This stage will be concluded with the new version of the research framework.

8.4.1 Framework Evaluation – Context and Application

From the perspective of the research theoretical framework and its validity, realised by airport project managers, all knowledge areas should be managed and coordinated properly. However, having linked the empirical findings of organisations' current performance and rationales behind participants' unsuccessful project experiences, an understanding of an organisation's environment centred on framework conceptual structure is crucial to ensure continuous improvement. The former was revealed from investigating the proposed framework in individual organisation context as shown in the cross cases analysis (Table 8.4), while the latter was recognised from practice-based sources as illustrated in Figure 8.9. Indeed, this confirms previous studies in strategic management and problem solving, which placed a great deal of emphasis on strategic thinking associated with environmental analysis approach (Bratton and Gold, 2012; David, 2011; Jabrouni *et al.*, 2011; Sanchez and Blanco, 2014).

Hence, organisations need to focus their efforts on managing the most important themes. However, what matters most varies and depends on context. It not only varies from one organisation to another, but also between projects within the same organisation. Making choices requires sufficient understanding of the context through effective strategic management analysis in terms of both project and human-related factors. Consequently, an organisation will identify its priorities and act accordingly. These priorities can then be applied to the set of management tasks. However, following the comprehensive analysis of

data collected in this study, several versions of the research framework can be developed which suit each organisation's context. As shown in Figure 8.12, a strategic thinking approach was developed by the researcher to facilitate development of the framework versions.

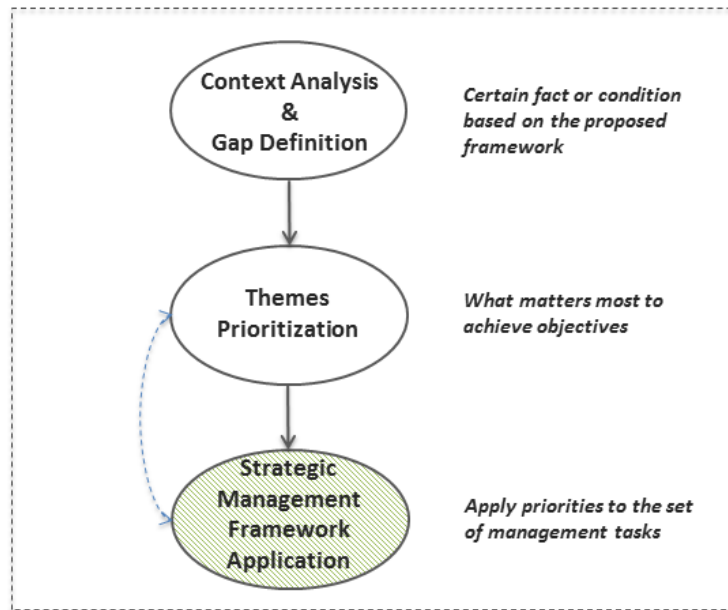


Figure 8.12: Strategic Approach for Developing Framework Different Versions

Context Analysis and Gap Definition

The first stage is to identify the environment context, whether at organisation or project level, and analyse it according to framework characteristics. The main objective is to investigate the extent to which each framework theme is structured within a context's project management agenda. This defining of the faults, weaknesses or limitations, involves evaluating, reviewing and reflecting upon previous experiences including positive and negative results.

Themes Prioritisation

Within the second level, after identifying the causes of problems and linking them to actual project management strategies, corrective actions can be implemented through adopting the proposed framework. Themes prioritisation process is a key task here, which can be realised through aligning organisation/project main objectives with what matters most.

Strategic Management Framework Application

Themes prioritisation stage informs decisions about what is required to be done for project/programme managers. An emergent framework is realised and its components can be applied to the set of management and controlling practices associated with the environment context.

The organisation's framework designs are realised through implementing the previous strategic approach including integrated insight and analysis of:

- An organisation's unsuccessful experiences (Table 8.4), which represent pre-effective strategic management practices.
- An organisation's actual management practices (Figure 8.9), which may have been identified during the organisation's continuous improvement approaches.
- An organisation's indicators for measuring project success (Figure 8.10), which represent what matters most under the various forms of ownership structures.

8.4.1.1 Organisation 1 Framework's Version – Private Airport Operator

In this particular private ownership organisation, the private operator and airlines operators are the airport holding body in relation to defining project goals and related benefits. Their primary concern is financial and how they can generate benefits from various projects. This has contributed to effective and efficient management practices. In line with this, a structured management framework was established to achieve expected quality, reduce any potential delay and avoid safety misconduct, which may affect project cost and minimise financial

benefits. In addition, the continuous improvement concept has been adopted by developing a strategic plan (quinquennium) for every five-year period, in order to realise the organisation's competitive advantages and achieve business excellence. As a result, project team formulation is based on an organised and structured process that defines team strategy for each project context. Project stakeholders are effectively engaged with a clear leadership structure and defined method of communication. However, as shown in Figure 8.13, project directors/managers have been encouraged to demonstrate relationship values and behaviours in relation to understanding and collaboration, as well as ensure that project parties have the required culture. Therefore, stakeholders must have supporting strengths and behaviours in order to participate in projects, reinforced by strategic development plans, including training and workshops.

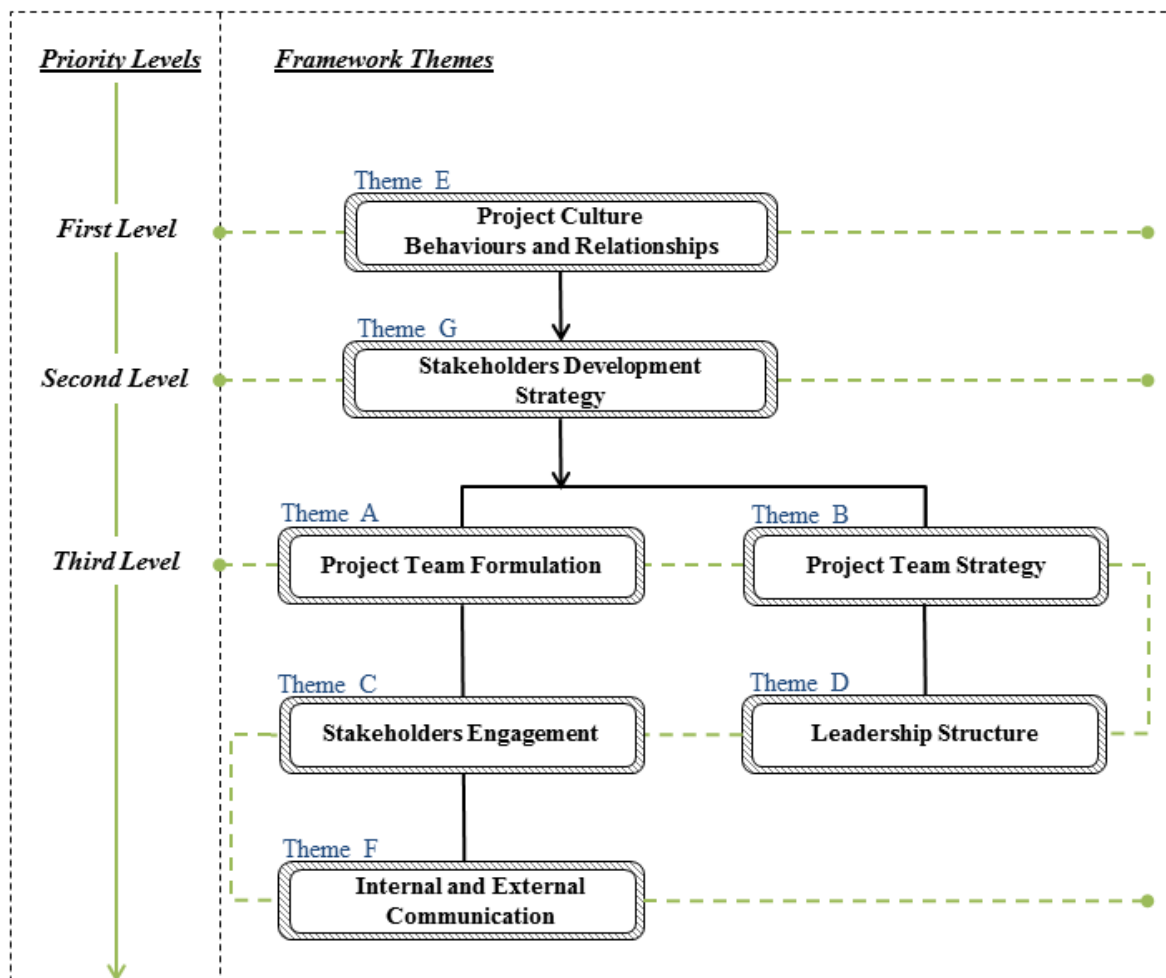


Figure 8.13: Organisation 1 Framework Version

8.4.1.2 Organisation 2 Framework's Version – Public Airport Operator

In organisation 2, various factors related to management practices prevent the government owner from accomplishing various construction projects on time and, accordingly, project budgets are increased. This has recently become the organisation's major concern.

The unstructured process of project team formulation does not permit the organisation to realise the maximum benefits from projects' participants, and which facilitate the achievement of project goals. Consequently, project managers make huge efforts in developing a project team, its working strategy and project culture rather than focusing on managing and controlling stakeholders and project deliverables. Moreover, an obvious gap exists between project parties, as there is no direct relation between internal project team and other stakeholders, which significantly affects trust. In such an environment, project participants' comfort level and their ability to understand each other's opinion are decreased, which significantly affects project information flow and contributes to an unhealthy working environment. Additionally, ineffective internal and external communication strategy between project stakeholders leads to misunderstanding, tension and stress between team members, which negatively affects their productivity and lowers their commitment and moral. As a consequence, a project will experience time and financial loss. However, the misconduct of project management activities leads to inefficient performance. Thus, organisation 2 is encouraged to adopt the strategic framework, as shown in Figure 8.14, in order to enhance its project management practices, and to achieve project goals and business excellence.

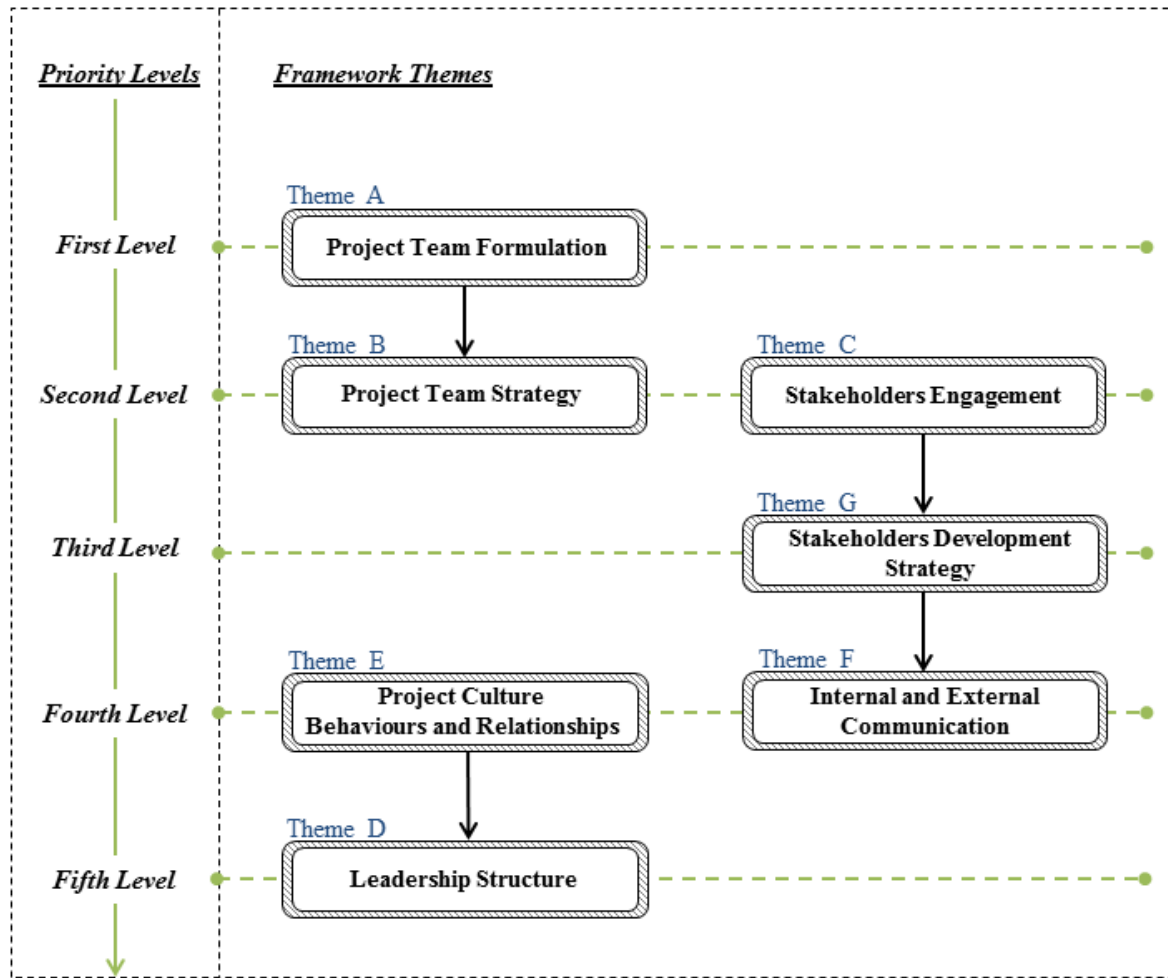


Figure 8.14: Organisation 2 Framework Version

8.4.1.3 Organisation 3 Framework Version – Public and Private Airport Operator

The primary characteristic of organisation 3's integrated joint venture agreement is that the parties share project profit and losses. However, during the development of the joint venture agreement, a common goal was established between key project stakeholders, mainly centring on achieving expected project quality on time. Furthermore, the main members have a vital part to play not only in project design and construction phase, but also participating in future airport operation. Indeed, this collaboration contributes to an effective and efficient performance of management practices, which enables the project team to meet project goals effectively and minimise potential construction delays that might be the result of disagreement or duplicated roles. In this context, a very structured and organised method has been adopted during project team development phases. Project stakeholders have engaged

and clarified their requirements at early project stages through the supervision of the project client organisation assigned by the airport government owner. The development of a project team formulation is based on the know-how structure of the joint venture parties, which is the reason for the lack of stakeholders' development strategy within the construction project context. Leadership structure along with internal and external communication methods have been established and identified. However, the joint venture is not only a temporary collaboration between organisations, but also a sharing of activities between individuals with different attitudes, beliefs and cultural backgrounds. Collaborative spirit and various key elements among team members are essential in order to create an effective working environment and, ultimately, achieve project goals. Disregarding such important factors may minimise chances of success and lead to the collapse of the joint venture. As shown in Figure 8.15, the joint venture's project director/manager has to make great effort to establish a reasonable approach of teamwork strategy and provide synergy between members when undertaking construction activities. Maintaining a certain type of project culture including individual behaviours, focus and direction should not be neglected. A superior working environment is highly encouraged and should be provided through developing and delivering participants' shared assumptions, values and beliefs, which are perceived as essential tools for project team success.

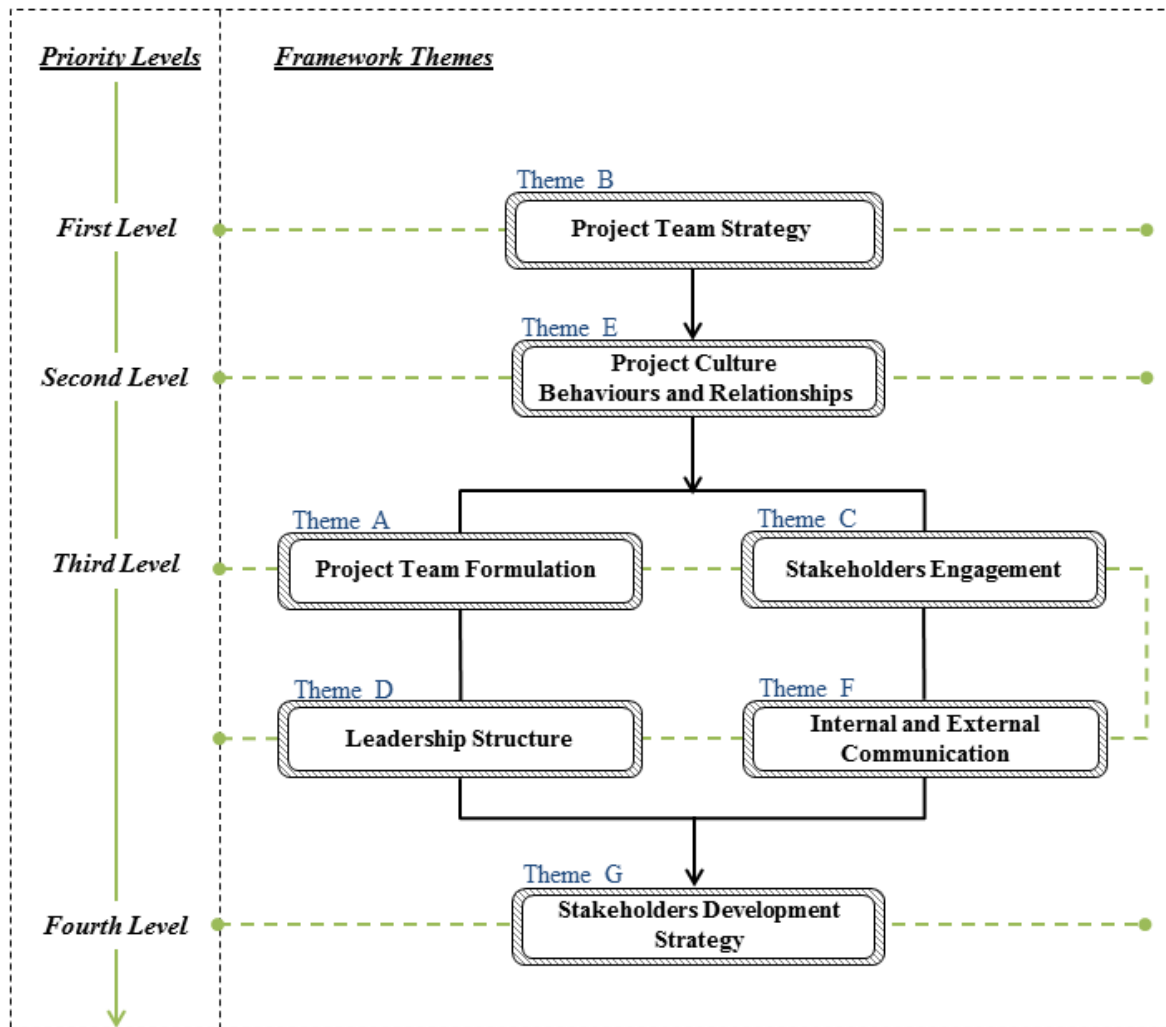


Figure 8.15: Organisation 3 Framework Version

8.4.2 Framework Refinement

The proposed theoretical framework was developed through integrating different knowledge areas that present a coherent set of strategies, concepts, processes, beliefs, methods, procedures and approaches relevant to effective and efficient practices of project management. The developed framework and its mechanism is not a definite set of knowledge that has to be strictly adopted and followed by airport holding bodies and their project managers otherwise inefficiency will be associated with construction business. Instead, it should be taken as a guide for improving the airport construction project management process. It was designed to address the key challenges within airport context, throughout project lifecycle.

The initial development of framework themes was theory-based activity, which has received a great level of agreement from field practitioners. However, practice-based activity has suggested addressing a key concept seen as an integral part of any project-based environment. The emerging attribute is lessons learned from previous project experiences. Yet, in order to engage with this new knowledge in the research theoretical framework design, an understanding of its concept, approach and important aspects should be considered first in the following section.

8.4.2.1 Emergent Theme (Theme H) - Lessons Learned Strategy

In the review of lessons learned (LL) literature, a great deal of attention was paid to this concept by practitioners and researchers in the field of project management, organisational learning and knowledge management (Carrillo *et al.*, 2013; Disterer 2002; Schindler and Eppler, 2003; Weber *et al.*, 2001). It is becoming increasingly vital for organisations due to its remarkable benefits, which are acknowledged on an industry, project and even individual level. Organisations in different industries have realised that their business success is highly associated with their ability to learn from their previous experiences (Jalili *et al.*, 2011). As a result, various recent studies in the project management context have focused on LL approaches, systems and tools, but very little have been undertaken in the construction industry. In addition, there is inadequate capture of lessons learned in relation to construction management practices, which can make a vital difference to project cost, time and quality and improve overall performance of project management activities (Carrillo *et al.*, 2013; David *et al.*, 2010 ; Jalili *et al.*, 2011). However, organisations are still struggling to develop a management approach for capturing, storing and disseminating lessons learned which, consequently, leads to poor performance in achieving desired benefits (Rhodes and Dawson, 2013).

LL literature offers a wide variety of conceptual definitions, and many researchers make the distinction between the process of identifying lessons and the action of lessons learned (Milton, 2011). In this regard, it has been argued that lessons are not learned unless changes result from applying them, which significantly improves organisational behaviour, project process or individual performance (Rhodes and Dawson, 2013; Weber *et al.* 2001).

However, the most integrated definition for lessons learned is offered by Secchi *et al.* (1999,

cited in Carrillo *et al.*, 2013: 568):

A knowledge or understanding gained by experience. The experience may be positive, as in a successful test or mission, or negative, as in a mishap or failure. Successes are also considered sources of lessons learned. A lesson must be significant in that it has a real or assumed impact on operations; valid in that is factually and technically correct; and applicable in that it identifies a specific design, process, or decision that reduces or eliminates the potential for failures and mishaps, or reinforces a positive result.

This definition clarifies the important criteria of LL concept, as it can be a positive or negative experience, and emphasises the impact required. Thus, organisations or project managers may use a lesson for various purposes, e.g. to repeat an outstanding experience, a corrective action for an emerging problem, a method for avoiding an error or enhancing the future performance of a task or process. Additionally, lessons are learned by experts or other individuals who might be retired or unavailable due to various reasons. In this respect, knowledge management (KM) goal is to preserve projects and organisations' knowledge, which may be lost, through lessons learned strategy (Weber *et al.*, 2001). In this context, it should be noted that several knowledge artifacts have also been recognised by KM researchers and practitioners such as incident reports, corporate memories and best practices (Kuhn and Abecker, 1997; O'Leary and Selfridge, 2000; Secchi, 1999). However, these strategies have been criticised due to some inefficiency associated with their application. They are concerned with only unsuccessful stories, not attached to a specific application, or capture only successful experiences (Weber *et al.*, 2001). Table 8.7 distinguishes these typical artifacts of knowledge management with respect to their origin, application, results and orientation.

Table 8.7: *Distinguishing Knowledge Management Artifacts (Weber et al., 2001:19)*

Knowledge Artefacts	Origin Originates from experiences?	Application Describes a complete process, decision or task?	Results		Orientation Supports organization or Industry
			Describe failures?	Describe Successes?	
<i>Lessons Learned</i>	Yes	No	Yes	Yes	Organization
<i>Incident Reports</i>	Yes	No	Yes	No	Organization
<i>Corporate Memories</i>	Possibly	Possibly	Yes	Yes	Organization
<i>Best Practices</i>	Possibly	Yes	No	Yes	Industry

Indeed, other sets of KM artifacts can hinder the process of allocating relevant lessons, as well as the considerable benefits that could otherwise be gained from LL strategy. Gorelick *et al.* (2004) stated that successful adoption of lessons learned should be employed at different stages, meaning that project team members learn at project initiating stage, during the project lifecycle and at the end of the project. The project starts with complete knowledge, and processes and plans can be altered as new and relevant knowledge becomes tangible. Most importantly, lessons are captured for future use (Rhodes and Dawson, 2013). However, the actual process of LL strategy adopted by organisations varies and can range from simple to complex. Various processes have been offered by researches that focus on lessons learned within the project management body of knowledge (Carrillo *et al.*, 2013; Weber *et al.*, 2001; Williams, 2008). In terms of construction management practices, Caldas *et al.* (2009) offered three key features of LL process: collection, analysis and implementation.

Collection

This stage is associated with gathering experiences from individuals, project managers or project team members. It can be achieved through submitting a formal lessons form by an organisation's member relating to its own experiences of specific tasks whether internally or externally. Interviews with expert members can be also conducted to satisfy this purpose. Another common technique within mature construction organisations is to collect lessons during or near the end of organisation projects through brainstorming, meetings and lessons learned sessions (Caldas *et al.*, 2009; Weber *et al.*, 2001). Some organisations that support

learning behaviours publish documents and reports to share their knowledge and lessons learned for the future benefits of industry projects along with academia and development programmes, e.g. lessons learned from the London 2012 construction project, lessons learned from the opening of Heathrow Terminal 5 and Denver International Airport. Organisations, therefore, should find relevant lessons and improve their construction management practices and standards.

Analysis

Following the process of lessons collection, these lessons must be validated and analysed before disseminating them within the organisation in order to guarantee that the LL process is correct, relevant and consistent and its information easy to interpret. A validation process can be performed through an individual, project team or subject matter expert. The quality department and the lessons learned review team, who are assigned by the organisation, constitute an alternative method of analysis. Data categorisation and prioritisation method should be highly considered by analysts in order to provide the most value from the lessons learned to the organisation (Caldas *et al.*, 2009; Weber *et al.*, 2001).

Implementation

It is extremely important for organisations to develop a storing system which puts the lesson into action, otherwise lessons cannot be helpful. Therefore, implementation step is vital to highlight lessons learned and make them available for future use (Collision and Parcell, 2005). Various forms are available for implementing lessons, ranging from initial meetings where project managers change their running projects' working practices, standards and procedures, to the use of an electronic database in which lessons are published and stored (Caldas *et al.*, 2009; Weber *et al.*, 2001).

Hence, the effective implementation of lessons learned strategy, including its collection, verification, storing, dissemination and reuse, is significantly supported by various factors: leadership, culture, process and technology (Carrillo *et al.*, 2013; Collision and Parcell, 2005; Rhodes and Dawson, 2013). Indeed, leadership and organisational culture are considered the most influential factors due to the crucial role that leaders play in developing LL process, as

well as project management maturity level in adopting its concept (Von Krogh *et al.*, 2012; Williams, 2008). However, one of the key success features of LL implementation is to include it formally within an organisation's various business processes as a fundamental requirement. Carrillo *et al.* (2013) argued that legal consideration aligned with LL practices should not be neglected in case of legal risk. Accordingly, clear understanding of legal issue must be part of LL development, in which review and approval procedures have to be performed by an organisation's legal department.

However, within the construction industry, there is general agreement that organisations aim to avoid the repetition of previous mistakes and misconducts, particularly, on major projects, due to the consequences and considerable losses resulting from any associated delay (Caldas *et al.*, 2009; Carrillo *et al.*, 2013; David *et al.*, 2010; Jalili *et al.*, 2011). Research participants also highlighted the crucial role that lessons learned strategy plays in leveraging management practice performance and achieving project goals effectively and efficiently. Thus, lessons learned strategy is engaged as an additional framework theme. Based on a review of the LL literature and with regard to effective LL strategy, the researcher suggests that organisational learning culture and the leadership strategy of programme/project managers must be strategically integrated in order to realise LL's benefits. LL major components are:

- **Learning culture:** this aspect is related to the maturity level of an organisation's project management. Overall, organisational behaviour supports the learning culture and habits, and motivates people through recognition of the importance of knowledge capturing and sharing. A mature organisation establishes an effective process of lessons learned strategy and includes applications in project management standards (Williams, 2008). Such an organisation is highly encouraged to implement an LL training scheme where individuals train on how to use an LL system (Rhodes and Dawson, 2013). Caldas *et al.* (2009) discussed how allocation of required LL resources, whether human, materials or technological, creates a healthy environment and solid platform, which encourages project managers and increases their commitment level. They referred also to an organisation's focus on LL active maintenance and continuous improvement. This will help to increase constantly lessons' validity and relevancy.
- **Strategic lessons learned leadership:** the actual implementation of LL strategy is

achieved through programme/project managers, so learning culture does not exist within an organisation unless its leadership believes that it does matter and act accordingly. This is due to the fact that the vital link of communication and transparency between upper managerial levels and construction team is developed by these managers. Leadership commitment to knowledge sharing and lessons learned implementation enables learning behaviours within project teams (Von Krogh *et al.*, 2012). Caldas *et al.* (2009) noted that LL vision and guidance are delivered to an organisation's members through the leadership's verbal communication and actions. Consistent behaviours and actions in an organisation creates an effective learning environment and success, which is characterised as a strategic LL leadership (Fedor *et al.*, 2003; Ho, 2009). Strategic LL leadership role is to assess LL process, establish its vision, define its process, allocate team members' roles and responsibilities and motivate them to apply effective LL behaviours (Carrillo *et al.*, 2013). In this context, Rhodes and Dawson (2013) emphasised the importance of addressing construction project time pressures, because if an organisation disregards this and does not allow adequate time for LL in project management processes, it will certainly fail to gain LL benefits.

Lessons learned strategy theme (Theme H) has developed and can be engaged in the research framework as shown in Figure 8.16. However, it appears that LL strategy components have some features strongly associated with other themes, particularly, project culture (Theme E) and stakeholders' development strategy (Theme G). Effective adoption of its concept within the framework must also investigate relevant project experiences in terms of the remaining themes: project team formulation (Theme A), project team strategy (Theme B), stakeholders' engagement (Theme C), leadership structure (Theme D) and internal and external communication (Theme F). Accordingly, the researcher suggests that LL strategy should work in parallel with both Themes E and G and engage with Themes A, B, C, D and F in individual project context. This means, once a decision has been made by an organisation to adopt the strategic framework philosophy, LL strategy is directly linked to the designing stage of project culture theme and stakeholders' development strategy theme. Project managers should reflect the lessons of relevant project experiences while considering other framework themes.

Project Management Practices within an Airport

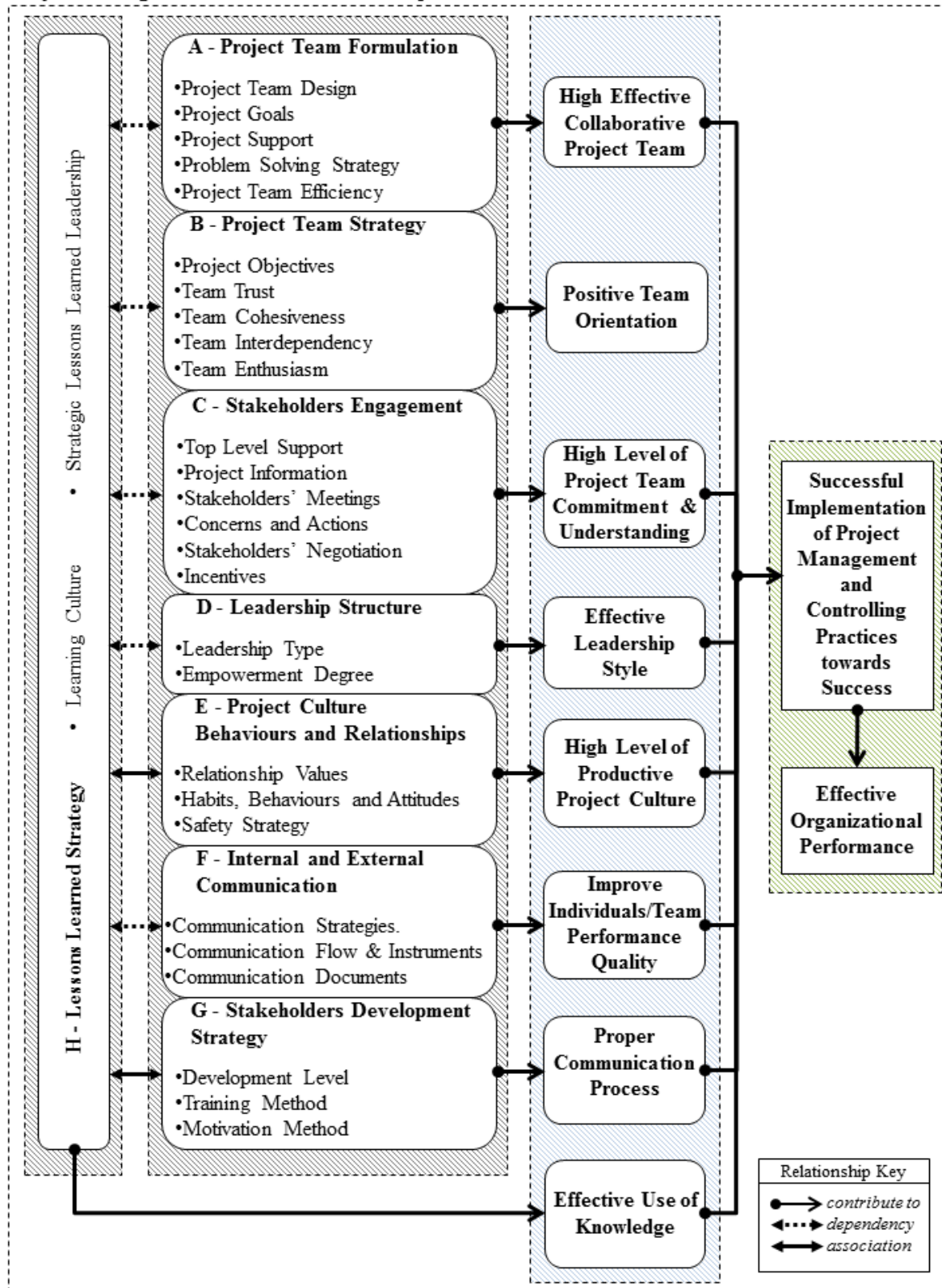


Figure 8.16: Refined Version of Research Theoretical Framework

9. CHAPTER NINE – CONCLUSION AND RECOMMENDATION

9.1 Introduction

Construction projects are an integral part of airport operations. The special circumstances inherent with working at an airport, particularly airside, result in production delays and costs that are much higher than those of traditional construction projects not associated with airports. It is therefore important that senior executives responsible for airports recognize the importance of construction management practice, i.e., project-related business operations of stakeholders and their human resource management strategies, to realize successful projects.

This PhD study set out to integrate key theories associated with project strategies, strategic human resource management, and efficiency management attributes in order to develop a theoretical framework for airport operators when managing and controlling construction projects. The resultant unique framework was formulated to respect either high complexity projects that are associated with existing airport facilities or when building new airports. The framework's main aim was to effectively support project managers when enhancing business operations through coping with airport environment difficulties (which were identified earlier in this study following a comprehensive review of airport construction characteristics as discussed in Section 5.6). It is important to note the framework was developed from key knowledge areas associated with construction and project management following a comprehensive review of the literature.

The investigation examined the association between airport ownership structure forms and construction project management practices. The main outcome of the study was the development of a framework, comprised of eight theoretical components, which enables airport operators to prioritize their attention when managing airport construction projects. However, how they choose what component matters the most varies, depending upon the context of the airport operator. Furthermore, airport operators' choices will vary not only from one organisation to another, but also between projects within the same organisation. Making appropriate choices therefore requires airport operators to have a focused understanding of the context in question, i.e., human, project or organization-related, in order to identify its priorities and to act accordingly. These priorities can then be applied by airport operators and their management teams to the set of organisation and project management tasks.

This chapter concludes the research project. It first addresses the achievements of the study's major aims and objectives, which were used to guide the development of research chapters, and the overview of the entire research project. Following this, key contributions of this study will be presented at three different levels: the researcher, knowledge and practice. The researcher will then outline several suggestions for further researches following a discussion of study limitations.

9.2 Aims and Objectives of the Study

The dynamic and fast changing nature of the construction industry, including complexity, fragmentation, multinational environment and advances in technology associated with its construction activities have presented organisations and their project managers with new challenges. The unique characteristics of an airport construction environment have led to various challenging and complex factors in the context of project management and control procedures. A re-evaluation, therefore, of existing management knowledge is needed. The main outcome of this research project, which has satisfied the research aims, is a strategic framework that supports airport holding bodies facing these challenges, and improves project management practices adopted by organisations and their project managers within airport construction.

The primary research aims have been realised through accomplishing a number of interrelated objectives which represent the rationale for the design of the different research chapters. In this respect, the researcher will conclude the research process.

9.2.1 Literature Review and Methodology

The literature review chapters (Chapter 2, Chapter 3, Chapter 4 and Chapter 5) offered a detailed and comprehensive critical evaluation of relevant studies regarding organisation, project, human-related strategies and their application in the construction industry, in particular, airport business. It was necessary to conduct a thorough theoretical review of the different research topics, which is crucial to justifying their relationship and locating this

research topic within different study fields. Indeed, the literature review process increased the researcher's understanding of core theories of construction business, strategic management effectiveness and its relation to airport construction business, as well as strengthened the need for developing a strategic framework. However, with regard to the literature review materials, it would not have been possible to complete this work without combining old and new studies. Older sources are building blocks for constructing knowledge, and the knowledge-building process is usually considered to be iterative. This confirms Naoum's (2013) definition of research as a process of balancing new and old facts to answer questions, solve issues or test hypotheses.

Hence, the review of the literature highlighted a key element which is needed for an organisation to perform effectively; that is, strategic competence and ability at both the functional and operational levels to understand their unique internal and external environment and identify what matters, in order to implement the most appropriate project management. It was also evident that construction organisations should focus their efforts on strategic project management and human-related factors to manage and control effectively their project management practices, particularly processes and people. With regard to people management, the study underlines the need to create an effective working environment based on a strong culture and clear structure and people who understand well their organisation's strategies including their roles and relationships. However, in order to achieve this, it is most important to understand individuals' cultures, competences and needs and, accordingly, to engage them in the construction project's various stages.

In the Airport Construction Theory Chapter certain gaps and weaknesses were identified in the research, which provided a solid foundation for developing research strategic framework components.

The Methodology chapter justified the researcher's choice of methods employed in the research project. Indeed, there are numerous options. However, the researcher's understanding of methodology and its key components has significantly developed following completion of a PGR training programme and the MSc course, the writing up of the research, research philosophy and paradigms training and the Applied Research Method module. Due to the lack of airport construction literature and the information needed to investigate actual

airport management practices and validate the proposed strategic framework, fieldwork was a fundamental process to achieve research project outcomes. This, in fact, facilitated the researcher's choice of appropriate techniques for primary and secondary data collection and related activities.

9.2.2 Research Theoretical Framework

The Research Theoretical Framework Chapter investigated and justified the elements of the research strategic framework within an airport business environment. Consequently, an exploratory model was constructed, which describes how framework theoretical themes correlate with project effectiveness and performance, particularly in terms of strategic project management and stakeholders' involvement and productivity.

However, the developed framework and its mechanism is not a definite set of knowledge that has to be strictly adopted by airport holding bodies and their project managers to avoid inefficiency in the construction business. Instead, it should be viewed as a signpost pointing towards greater efficiency in the airport construction project management process. It was designed to address key challenges and what matters most within an airport context, throughout a project lifecycle. Case studies investigation process and continuous improvement approach suggest that construction management practices should be updated every defined period of time. O1's five-year framework (quinquennium plan) provides important insights into management practices development needs, which require an adequate understanding of an organisation's internal and external environment.

9.2.3 Research Method and Analysis

The Data Analysis and Results Chapter provided empirical evidence in support of research framework conceptual design. This was achieved through conducting numerous semi-structure interviews with senior construction project managers of airport holding bodies in three airport organisations in terms of their ownership structures. The proposed framework was validated from different perspectives based on a post-positivist paradigm assumption. The results of the study identified a prioritisation approach concerning what matters most for

an organisation, particularly regarding the research strategic framework themes. Accordingly, three versions of the research framework were developed for each airport organisation. Lessons learned strategy theme identified following data analysis process. It investigated and evaluated, and effectively engaged with, the proposed strategic framework. This process concluded with refinements made to the research strategic framework, and based on this, a new research strategic framework version was developed.

The interview process and its related activities, transcribing and analysing, were associated with high cost and time consumption. However, the entire procedures added great value to the research project and deepened the researcher's understanding of how airport construction projects are managed and controlled under different ownership structures. Interviewing industry professionals, in their place of work, and having long discussions regarding the main focus of study, facilitated the researcher's visualising of the maturity level of organisations and the differences between ownership forms.

9.3 Key Research Contributions

9.3.1 Contribution to Knowledge

Petre and Rugg (2010: 14) stated, “making a ‘significant contribution’ means ‘adding to knowledge’ or ‘contributing to the discourse’ – that is, providing evidence to substantiate a conclusion that’s worth making.” Thus, the essence at knowledge contribution level is to find original knowledge and add it to existing body of knowledge associated with the specific field of study.

Within this research project, strategic management field is the main research knowledge, particularly, airport business. Management researchers and practitioners have examined the airport and aviation industry and offered numerous recommendations, strategies, methodologies and frameworks, in order to improve firms' efficiency. These investigations have applied to various practices, such as design and planning, operation and management, maintenance, traffic and passenger flow management, safety and security and information technology (Ashford *et al.*, 1997; Enoma and Allen, 2007; Graham, 2008; Stolletz, 2011;

Young and Wells, 2011). Airport ownership form has also received a great deal of attention and become an important subject for management and economic researchers. Strategic management literature has provided empirical evidence regarding the effects of ownership and governance structure on the performance and efficiency of various dimensions, including country economy, environment and society, firm investment, operation, administration and management and pricing impact on users (Backx *et al.*, 2002; Carney and Mew, 2003; Oum *et al.*, 2008; Parker, 1999; Yokomi, 2005). Although various studies have been undertaken within airport strategic management field, the literature lacks investigations in construction business. In this study, the researcher has tried to shift the focus and provide a strategic management framework for airport operators to adopt during managing and controlling existing airport construction projects, which could be also applied to new projects. The research project has raised important questions about the effect that different airport ownership forms have on construction management efficiency.

In the context of knowledge advancement and dissemination, the researcher endeavoured to promote the study through publication (see Appendix Q) in the peer-reviewed *Journal of Advanced Management Science* (JOAMS). The researcher also presented the findings at the 2013 International Conference on Construction and Project Management, as well as in the form of a poster (see Appendix R) presented at the Northumbria Research Conference 2013.

9.3.2 Contribution to Practice and Recommendations

Data analysis results have indicated that the proposed research theoretical framework is of strategic value to organisations and project managers who manage and control various airport construction projects. The research findings also confirmed that ownership and governance structure has an influence on the efficiency and maturity of management practices, in which a private organisation's (O1) management framework is obviously more organised and developed than that of a public airport operator (O2). However, the government department has leveraged its management, controlling and operation practices through allowing private sector participation (O3) in these activities in the form of a joint venture arrangement. The chosen private sector has exclusive control of the airport project and resulting benefits for an agreed period of time, after which the government retakes control of the improved asset.

Indeed, these results are in line with the study findings of numerous researchers in relation to

the ownership structure effects on efficiency and performance of various dimensions (Backx *et al.*, 2002; Carney and Mew, 2003; Oum *et al.*, 2008; Parker, 1999; Yokomi, 2005).

However, having the strategic framework and its knowledge is not adequate to make enhancement in practice. Knowledge-based change can be realised in practice if an organisation sponsors research and uses the knowledge and evidence to make changes accompanied by the required resources. Various practitioners are not motivated to engage in searching for new ideas, and they perceive research studies and related findings as irrelevant to their daily activities (Lewis, 2002). However, working with these professionals and addressing their work issues was a great opportunity to gain appropriate knowledge which contributes to change decisions. In order to help practitioners improve their practice, Lewis (2002) suggested two factors: the researcher has to proceed from actual practice condition, rather than relying on research knowledge, in addition to effectively interacting with professionals. Indeed, the interview approach for collecting study data and the validation process, in particular, the views of participants, supported these factors. In this context, the programme director (O1P10) of the private airport operator responsible for developing organisation management practices stated:

The thing that in your mind and what you are writing about, we are not there yet ... I have just been in a session which is, are we at risk for some of these stuff ... It is a bit touchy feeling for the construction industry to start talking about behaviours ... Contractors don't get these stuff, but they been contracted on that ... How you can contract on behaviours ... But there are mechanisms we have got on place to the CEO we go along ... We are going to give them the availability to how we are doing ... How me performing, how is my behaviours like ... How we can change the country contractors, they are all about money ... It is quite interesting ... We will make it work, I am going to be positive as a director on this.

Hence, as explained in Section 8.5.1, there is a need for flexibility and scalability aligned with adopting the strategic framework and engaging its conceptual application with actual

management and controlling practices. As shown in Figure 9.1, an airport organisation should focus its efforts on managing the most important framework themes that are needed to improve its management practices and, accordingly, achieve expectations. Making the right choice requires a clear and sufficient understanding of the context and what suits its procurement structure, project management resources and culture, with regard to framework components and desired project goals. An organisation, consequently, should identify its strategic priorities, and it is encouraged to act accordingly through applying the relevant framework to the set of management tasks, in order to manage and control its projects effectively.

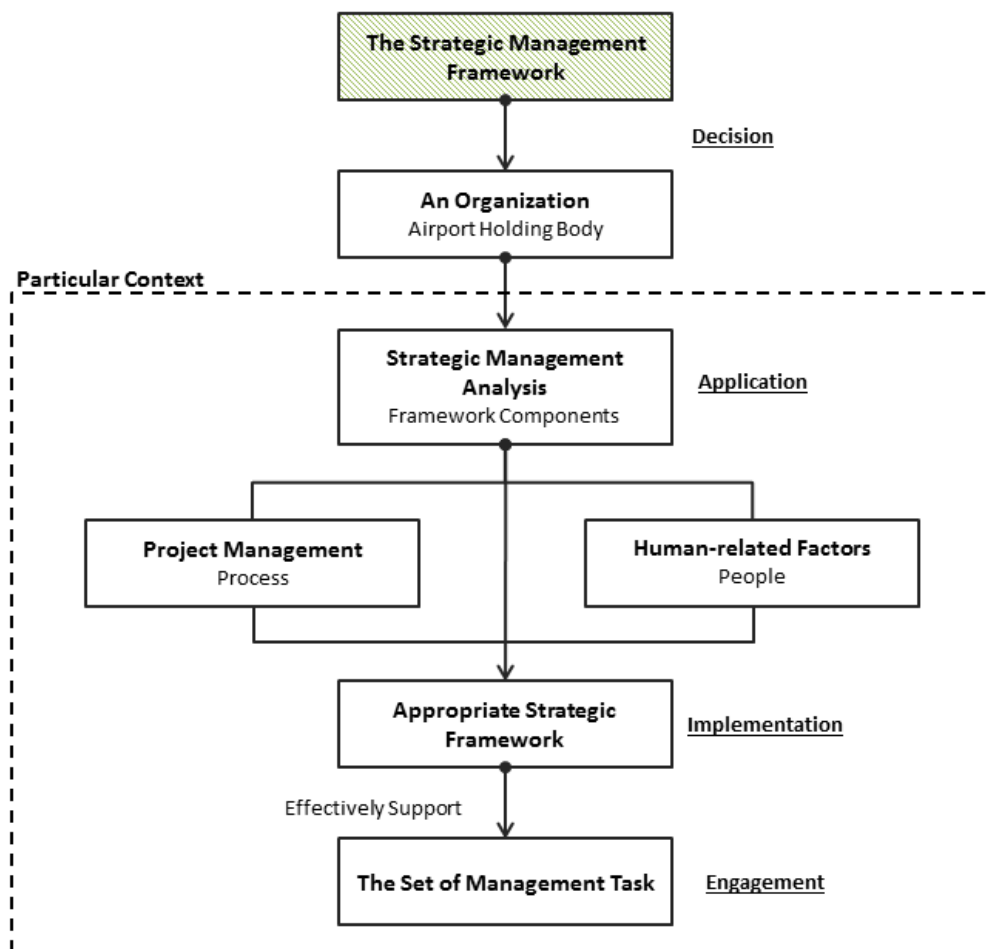


Figure 9.1: Contribution to Practice Roadmap

9.3.3 Contribution to the Researcher

One of the key features throughout the entire PhD journey is the researcher's learning curve. The researcher's progress in gaining new skills and experiences was successful based on various factors: postgraduate research personal development programme, research analytical thinking and lengthy discussions with airport construction professionals.

Postgraduate Research Personal Development Programme

As a researcher, being in charge of personal and professional development was key to gaining new skills during the research journey. It involved more than acquiring the research skills of a development scheme. Instead, it has broader relevance to a professional career enabling the researcher to add great value to organisations, particularly development programmes relating to strategic thinking and project planning and management as well as effective communication and networking. The researcher has successfully completed a range of PGR professional development and research training programme activities (see Appendix S). The selected training programmes were chosen to equip the researcher with the necessary research skills, knowledge, competences and attributes. Training courses, in particular, cover four main domains (see Appendix S): knowledge and intellectual abilities, personal effectiveness and development, research governance and organisation and engagement, influence and impact (Vitae, 2011).

Research Analytical Thinking and Problem Solving Approach

In this research project, as illustrated in Figure 9.2, the process of acquiring knowledge, understanding related problems, identifying possible causes, drawing conclusions and finding appropriate solutions were based on the adoption of deductive reasoning approach. Accordingly, analytical thinking and problem solving were the main skills needed to accomplish successfully the different stages of research, in particular, the data analysis and presentation of results. Indeed, strategies used to collect research primary data and to follow a lengthy qualitative data analysis process, including dividing them into meaningful components and drawing conclusions from the evidence and applying judgements to achieve study conclusions, have significantly developed the foundational thinking skills of the researcher.

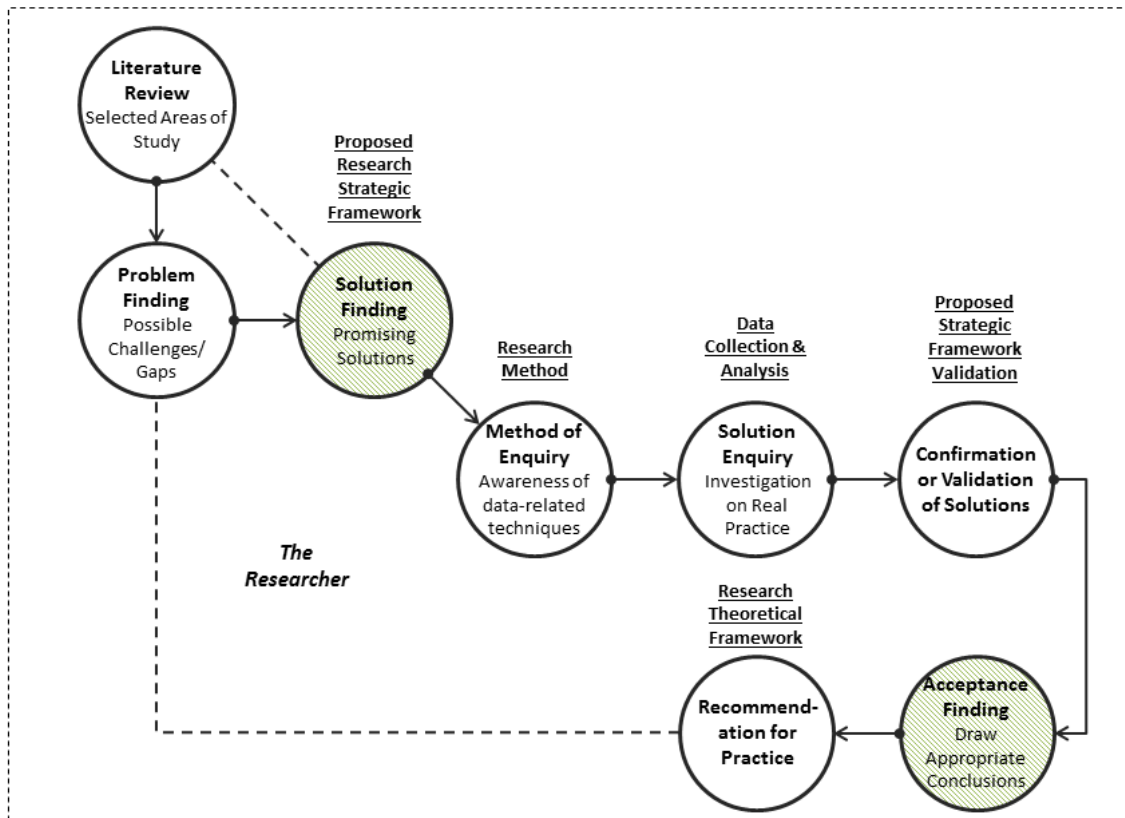


Figure 9.2: The Research Project Journey

Interviewing Industry Professionals

Interview is considered as an effective data collection tool. However, in addition to the study benefits from conducting face-to-face interview, as shown in Section 7.5.2, it involves broad understanding. Discussion with various senior airport construction managers was a great opportunity for learning that is not easily found anywhere. The knowledge and experience obtained from professionals may not be available in secondary data sources. Interviewing industry professionals in different countries, as regards their activities, including securing data access and scheduling interview sessions, have improved the researcher's level of confidence as well as time management, coordination, communication and conversational skills. It has also expanded the researcher's network of contacts, specifically, in the airport construction management field.

9.4 Recommendation for Further Research and Limitations of the Study

Making suggestions and identifying directions for future study is important as it also offers several opportunities for further research proposals. Recommendations will be based on suggesting how research limitations could be overcome. However, matters arise in the research project and beyond the researcher's control which are acknowledged as study limitations. Recognising these limitations reflects the degree to which the study results and conclusions can be considered to be reliable (Saunders *et al.*, 2009). In the following sections, I identify and explain the study limitations which have the greatest impact on the quality of the findings and the researcher's ability to achieve the research project objectives. The choices that the researcher made along with suggestions and directions for further research will be also justified.

9.4.1 Public Corporation Operator Involvement

The time constraints of this research project meant that the proposed strategic framework could not be verified for all forms of ownership structures. If this had been done, the validity of comparison activities would have increased and thus added reliability to the research findings. Indeed, approaching the appropriate airport organisation and obtaining its agreement to conduct interviews with their senior project managers/directors was not an easy task. Although the researcher achieved an advanced level of communication with a public corporation operator, ultimately, access could not be secured. Having discussed with the research supervision team and panel examiners the length of time that the researcher needed to secure organisation access, and to collect and analyse the obtained data, a decision was made on the acceptability of cases in the study. Thus, research case studies were investigated in three ownership structures: private, government department and public corporation.

The researcher's inability to secure additional airport ownership access suggests an area of future research where the proposed framework can be investigated as regards a public corporation operator. This will reveal the suitability of the framework for all different modes of operation. A new perspective, therefore, of the relation between ownership structure and construction management efficiency would be realised.

9.4.2 Investigating the Framework in Different Airport Environments

The construction industry and airport construction literature showed that airport construction environments significantly vary. Construction projects differ not only between organisations, but also between projects within the same organisation. However, various factors influence construction business performance, ranging from the maturity level of the organisation, procurement methods and project managers' approaches, to project management strategies adopted. One of the research project limitations is that its data were acquired from a single airport environment and only concerned the management practice of one organisation under each ownership structure form.

In order to achieve better validity of the research framework, the generality of findings and continual improvement of the research strategic management initiative, additional research is needed in order to understand how different airport operators, under the same ownership structure, perform while managing their construction projects.

9.4.3 Applicability of the Strategic Framework in Different Industries

The research strategic framework in its current form emerged from a process of understanding a specific environment and identifying its problems and obstacles in relation to management practices. These investigative processes aimed to identify the root causes of problems and their effects on management and control activities of construction projects in an airport business environment. The developed framework, therefore, represented the corrective actions that were significantly encouraged while managing and controlling airport construction projects. However, the potential application of the research strategic framework in other industries has not yet been determined. Indeed, investigating framework components and their importance within different industries would support the generality of the research findings process.

Further research can be carried out to establish the potential application of the strategic framework and study its effectiveness in relation to other industries and their construction

management activities. This might lead to a definite clarification with regard to whether airport construction projects differ from those in other industries. It would also help to reveal the suitability of the framework beyond its current use as a tool of strategic management for managing and controlling construction projects.

REFERENCES

Adrem, A., Schneiderbauer, D., Meyer, E. and Majdalani, F. (2006) *Managing Airports Construction Projects* [online] available from <www.boozallen.com> [9 April 2012].

Afsar, B. (2011) 'Strategic Management in Today's Complex World.' *Business Intelligence Journal* 4 (1), 143-149.

Agapiou, A. (2002) 'Perceptions of Gender Roles and Attitudes toward Work among Male and Female operatives in the Scottish Construction Industry.' *Construction Management and Economics* 20 (8), 697-705.

Airport Authority Hong Kong (2012) *A Report on Expansion of Hong Kong International Airport into a Three-Runway System*. Hong Kong: Mott MacDonald.

Akiner, I. and Akiner, M.E. (2009) 'Evaluation of Turkish Construction Industry through the Challenges and Globalization.' *An International Journal* 1 (2), 64-71.

Amah E. and Ahiauzu, A. (2013) 'Employee Involvement and Organizational Effectiveness.' *Journal of Management Development* 32 (7), 661-674.

Anaman, K. A. and Amponsah, C. (2007) 'Analysis of the Causality Links between the Growth of the Construction Industry and the Growth of the Macro-economy in Ghana.' *Construction Management and Economics* 25 (9), 951-961.

Anderson, D. K. and Merna, T. (2003) 'Project Management Strategy – Project Management Represented as a Process Based Set of Management Domains and the Consequences for Project Management Strategy.' *International Journal of Project Management* 21 (6), 387-393.

Ankrah, N. A. Proverbs, D. and Debrah, Y. (2008) 'Factors Influencing the Culture of a Construction Project Organization: An Empirical Investigation.' *Engineering, Construction and Architectural Management* 16 (1), 26-47.

Arksey, H. and Knight, P. (2011) *Interviewing for Social Research*. London: SAGE Publications Ltd.

Armstrong, M. (1991) 'A Handbook of Personnel Management Practice 4th Edition.' *Asia Pacific Journal of Human Resources* 31 (2), 143-144.

Armstrong, M. (2006) *Strategic Human Resource Management 3rd Edition: A Guide to Action*. London: Kogan Page.

Armstrong, M. and Baron, A. (1998) *Performance Management: The New Realities*. London: Institute of Personnel and Development.

Armstrong, M. and Baron, A. (2002) *Strategic HRM: The Route to Improved Business Performance*. London: Chartered Institute of Personnel and Development.

Ashford, N. J., Stanton, H. P. M. and Moore, C. A. (1997) *Airport Operations*. New York: McGraw-Hill.

Ashford, N. and Wright, P. H. (1992) *Airport Engineering 3rd Edition*. New York: Wiley-Interscience.

Artto, K., Kujala, J., Dietrich, P. and Martinsuo, M. (2008) 'What is Project Strategy?' *International Journal of Project Management* 26 (1), 4-12.

- Atkinson, R. (1999) 'Project Management: Cost, Time and Quality, Two Best Guesses and a Phenomenon, Its Time to Accept Other Success Criteria.' *International Journal of Project Management* 17 (6), 337-342.
- Austin, S. A., Baldwin, A. N. and Steele, J. L. (2002) 'Improving Building Design through Integrated Planning and Control.' *Engineering Construction Architectural Management* 9 (3), 249-258.
- Ayres, L. Kavanaugh, K. and Knafl, K. A. (2003) 'Within-Case and Across-Case Approaches to Qualitative Data Analysis.' *Qualitative Health Research* 13 (6), 871-883.
- Baccarini, D. (1996) 'The Concept of Project Complexity- A Review.' *International Journal of Project Management* 14 (4), 201-204.
- Backx, M. Carney, M. and Gedajlovic, E. (2002) 'Public, Private and Mixed Ownership and the Performance of International Airlines.' *Journal of Air Transport Management* 8 (4), 213-220.
- Baiden, B. K. Price, A. D. F. and Dainty, A. R. J. (2006) 'The Extent of Team Integration within Construction Projects.' *International Journal of Project Management* 24 (1), 13-23.
- Baiden, B. K. and Price, A. D. F. (2011) 'The Effect of Integration on Project Delivery Team Effectiveness.' *International Journal of Project Management* 29 (2), 129-136.
- Ballard, G. and Howell, G. (2010) 'Lean Project Management.' *Building Research Information* 31 (2), 119-133.
- Balle, F. and Balle, M. (2009) *The Lean Manager – A Novel of Lean Transformation*. Cambridge: Lean Enterprise Institute.
- Bandura, A. (2000) 'Exercise of Human Agency through Collective Efficacy.' *Current Direction in Psychological Science* 9 (3), 75-78.

- Banks, J., Cook, F., Earls, E., Friedmann, C. and Lo, C. (2012) 'The New Mega Hubs.' *Airport Industry Review* 3 (August), 1-18.
- Banks, J., Cook, F., Earls, E., Friedmann, C. and Lo, C. (2012) 'Faster, Safer, Smarter.' *Airport Industry Review* 2 (May), 1-20.
- Bertelsen, S. (2002) 'Complexity- Construction in a New Perspective.' *Proceedings of the 10th Conference of the International Group for Lean Construction*. Held August 6–8 2002 at Gramado. Brazil: 1-16.
- Basu, V. Hartono, E. Lederer, A. L. and Sethi, V. (2002) 'The Impact of Organizational Commitment, Senior Management Involvement and Team Involvement on Strategic Information Systems Planning.' *Information and Management* 39 (6), 513-524.
- Becker, B. E. Huselid, M. A. Pickus, P. A. and Spratt, M. F. (1997) 'HR as a Source of Shareholder Value: Research and Recommendations.' *Human Resource Management* 36 (1), 39–47.
- Becker, B.E. and Huselid, M. A. (2006) 'Strategic Human Resources Management: Where Do We Go From Here?' *Journal of Management* 32 (6), 898-925.
- Beesley, M. E. (1997) *Privatization, Regulation and Deregulation 2nd Edition*. London: Routledge.
- Bender, W.J. and Septelka, D.M. (2002) 'Teambuilding in the construction industry.' *46th Annual Meeting of AACE International*. Held June 23-26 2002 at Portland. US: Association for the Advancement of Cost Engineering: 131-134.
- Bennett, F.L. (2003) *The Management of Construction: A Project Life Cycle Approach*. London: Butterworth-Heinemann.

Berg, B. L. (2009) *Qualitative Research Methods for the Social Sciences 7th Edition*. Boston: Pearson Education, Inc.

Betts, M., Clark, A., and Ofori, G. (1999) *Strategic Management of IT in Construction*. Oxford: Blackwell Science.

Betts, M. and Ofori, G. (1994) 'Strategic Planning for Competitive Advantage in Construction: the institution.' *Construction Management and Economics* 12 (3), 203-217.

Bhaskar, R. (1989) *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*. London: Verso.

Binnekade, F., Biciocchi, R., O'Rourke, B. E. and Vincent, C. (2009) *Creating Smarter Airports: An Opportunity to Transform Travel and Trade USA*: IBM.

Blyton, P. and Turnbull, P. (2004) *The Dynamics of Employee Relations*. Basingstoke: Palgrave Macmillan.

Bohm, D. (1983) *Wholeness and the Implicate Order*. London: Ark.

Bonavia, T. and Martin-Garcia, J. A. (2011) 'Integrating Human Resource Management into Lean Production and Their Impact on Organizational Performance.' *International Journal of Manpower* 32 (8), 923-938.

Bouma, G. D. (2000) *The Research Process 4th Edition*. UK: Oxford University Press.

Brandenburg, S.G., Haas, C.T. and Byrom, K. (2006) 'Strategic Management of Human Resources in Construction.' *Journal of Management in Engineering* 22 (2), 89-96.

- Bratton, J. and Gold, J. (2012) *Human Resource Management: Theory and Practice 5th Edition*. Hampshire: Palgrave Macmillan.
- Bryman, A. (2008) *Social research methods 3rd Edition*. Oxford: Oxford University Press.
- Burns, R. B. (2000) *Introduction to Research Methods 4th Edition*. UK: SAGE Publications Ltd.
- Burrell, G. and Morgan, G. (1979) *Sociological Paradigms and Organizational Analysis*. London: Heinemann.
- Caldas, C. H. Gibson, G. E. Weerasooriya, R. and Yohe, A. M. (2009) 'Identification of Effective Management Practice and Technologies for Lessons Learned Programs in the Construction Industry.' *Journal of Construction Engineering and Management* 135 (6), 531-539.
- Carlsson, M. H. (1993) 'Consistency in Quality – A Baseline for Achieving Total Quality Management.' *Quality and Readability Engineering International* 9 (3), 217-225.
- Carrillo, P. Ruikar, K. and Fuller, P. (2013) 'When Will We Learn? Improving Lessons Learned Practice in Construction.' *International Journal of Project Management* 31 (4), 567-578.
- Carney, M. and Mew, K (2003) 'Airport Governance Reform: A Strategic Management Perspective.' *Journal of Air Transport Management* 9 (4), 217-228.
- Chan, A. B. C. (2004) 'Key Performance Indicators for Managing Construction Success.' *Benchmarking: An International Journal* 11 (2), 203-221.
- Chan, A.P.C., Scott, D. and Chan, A.P.L. (2004) 'Factors Affecting the Success of a Construction Project.' *Journal of Construction Engineering and Management* 130 (1), 153-155.

Charles, H.W.L. and Jones, G.R. (2008) *Strategic Management: An Integrated Approach 8th Edition*. USA: Houghton Mifflin.

Cheah, C., and Garvin, M. J. (2004) 'An Open Framework for Corporate Strategy in Construction.' *Engineering, Construction and Architectural Management* 11(3), 176-188.

Chew, D., Yan, S. and Cheah, C.Y.J. (2008) 'Core Capability and Competitive Strategy for Construction SMEs in China.' *Chinese Management Studies* 2 (3), 203-214.

Chinowsky, P. (2000) *Strategic Corporate Management for Engineering*. New York: Oxford University Press.

Chinowsky, P.S. (2001) 'Strategic Management in Engineering Organization.' *Journal of Management in Engineering* 17 (2), 60-68.

Chinowsky, P.S. and Meredith, J.E. (2000) 'Strategic Management in Construction.' *Journal of Construction Engineering and Management* 126 (1), 1-9.

Chinyio, E.A. and Akintoye, A. (2008) 'Practical Approaches for Engaging Stakeholders: Finding from the UK.' *Construction Management and Economics* 26 (6), 591-599.

Chow, I. H. S. and Liu, S. S. (2009) 'The Effect of Aligning Organizational Culture and Business Strategy with HR Systems on Firm Performance in Chinese Enterprises.' *The International Journal of Human Resource Management* 20 (11), 2292-2310.

Chow, L. J., Then, D. and Skitmore, M. (2005) 'Characteristics of Teamwork in Singapore Construction Projects.' *Journal of Construction Research* 6 (1), 15-46.

Chartered Institute of Personnel and Development (2009) A Report on Performance Management [online] London: CIPD. Available from
http://www.cipd.co.uk/NR/rdonlyres/64B9C9FD-8168-4EDC-9B71-DD3D8B5C2B90/0/performance_management_discussion_paper.pdf [15 January 2015].

- Clarke, N. (2012) 'Shared Leadership in Projects: A Matter of Substance Over Style.' *Team Performance Management* 18 (3/4), 196-209.
- Cleland, D. I., (2004) *Strategic Management: the Project Linkages*, in The Wiley Guide to Managing Projects (eds Morris, P. W. G. and Pinto, J. K.). London: John Wiley & Sons Inc.
- Cleland, D. and Gareis, R. (2006) *Global Project Management Handbook: Planning, Organization and Controlling International Projects 2nd Edition*. USA: McGraw-Hill.
- Collis, J. and Hussey, R. (2003) *Business Research 2nd Edition*. New York: Palgrave Macmillan.
- Collision, C. and Parcell, G. (2005) *Learning to Fly: Practical Knowledge Management from Leading to Learning Organizations*. UK: Capstone Publishing Ltd.
- Cooper, M. (2000) 'Towards a Model of Safety Culture.' *Safety Science* 36 (2), 111-136.
- Cooper, H. (2004) 'Lean Maintenance Maximizing Cost Saving.' *Manufacturing Engineering* 133 (6), 16-17.
- Corman, S. R. and Poole, M. S. (2000) *Perspectives on Organizational Communication: Finding Common Ground*. USA: The Guilford Press.
- Cox, T.H. and Blake, S. (1991) 'Managing Cultural Diversity: Implications for Organizational Competitiveness.' *Academy of Management Executive* 5 (3), 45-55.
- Creswell, J. W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles: SAGE Publications, Inc.

Creswell, J. W. and Miller, D. L. (2000) 'Determining Validity in Qualitative Inquiry.' *Theory into Practice* 39 (3), 124-131.

Crevani, L. Lindgren, L. and Packendorff, J. (2007) 'Shared Leadership: A Postheroic Perspective on Leadership as a Collective Construction.' *International Journal of Leadership Studies* 3 (1), 40-67.

Daft, R.L. (2008) *The Leadership Experience 4th Edition*. USA: South-Western.

Dainty, A. R. J., Bagihole, B. M. and Neale, R. H. (2000) 'A Grounded Theory of Women's career underachievement in Large UK Construction Companies.' *Construction Management and Economics* 18 (2), 239-250.

Dainty, A. R. J. Harty, T. E. and Neale, R. H. (2000) Improving Employee Resourcing within Large Construction Organizations. In: Akintoye, A (ed.) *16th Annual ARCOM Conference*. Held 6-8 September 2000 at Glasgow Caledonian University. UK: Association of Researchers in Construction Management: 49-59.

David, A. Gul, P. and Serhan, A. (2010) 'Lessons Learned System in Construction Management.' *International Journal of Project Organization and Management* 2 (1), 61-83.

David, F. R. (2011) *Strategic Management: Concepts and Cases 13th Edition*. New Jersey: Prentice Hall.

Davis, D. and Dodd, J. (2002) 'Qualitative Research and the Question of Rigor.' *Qualitative Health Research* 12 (2), 279-289.

De Haan, J., Voordijk, H. and Joosten, G. (2002) 'Market Strategies and Core Capabilities in the Building Industry.' *Construction Management and Economics* 20 (2), 109-118.

- Delany, S. (2016) Classification. (1 April 2016) toolkit.thenbs.com [21 March 2016].
- Delery, J. E. and Doty, D. H. (1996) 'Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency and Configurational Performance Predictions.' *Academy of Management Journal* 39 (4), 802-835.
- Dempsey, P. S. (2000) *Airport Planning and Development Handbook: A Global Survey*. New York: McGraw-Hill.
- Denzin, N. K. (1978) *The Research Act: A Theoretical Orientation to Sociological Methods 2nd Edition*. New York: McGraw-Hill.
- Dey, I. (1993) *Qualitative Data Analysis: A User-friendly Guide for Social Scientists*. London: Routledge.
- Di Gregorio, S. and Davidson, J. (2008) *Qualitative Research Design for Software Users*. UK: Open University Press.
- Dikmen, I. and Birgonul, M. (2003) 'Strategic Perspective of Turkish Construction Companies.' *Journal of Management in Engineering* 19 (1), 33-44.
- Disterer, G. (2002) 'Management of Project Knowledge and Experiences.' *Journal of Knowledge Management* 6 (5), 512-520.
- Doganis, R. (1998) *The Airport Business*. London: Routledge.
- Easterby-Smith, M. Thorpe, R. and Lowe, A. (2002) *Management Research: An Introduction 2nd Edition*. London: Sage Publication Ltd.
- Easton, G. S. and Jarrell, S. L. (1998) 'The Effects of Total Quality Management on Corporate Performance: An Empirical Investigation.' *Journal of Business* 71 (2), 253-307.

- Elizabeth, C. and Cassandra, E. (2010) 'Incorporating Lean Concepts into Supply Chain Management.' *International Journal of Six Sigma and Competitive Advantages* 6 (1-2), 12-30.
- Emmit, S. (2011) 'Lean Design management.' *Architectural Engineering and Design* 7 (2), 67-69.
- Engwall, M. (2003) 'No Project is an Island: Linking Projects to History and Context.' *Research Policy* 32 (5), 789-808.
- Enoma, A. and Allen, S. (2007) 'Developing Key Performance Indicators for Airport Safety and Security.' *Facilities* 25 (7/5), 296-315.
- Evans, J. R. and Lindsay, W. M. (2005) *The Management and Control of Quality 6th Edition*. US: Thomson Corporation.
- Fedor, D. B. Ghosh, S. Caldwell, S. D. Maurer, T. J. and Singhal, V. R. (2003) 'The Effects of Knowledge Management on Team Members' Ratings of Project Success and Impact.' *Decision Sciences* 34 (3), 513-539.
- Feldman, D. (2007) 'Improving Management Quality in the Global Airport Industry: A Re-orientation Towards Value.' *Journal of Airport Management* 1 (4), 370-376.
- Fergusson, H. and Langford, D.A. (2006) 'Strategies for Managing Environmental Issues in Construction Organizations.' *Engineering, Construction and Architectural Management* 13 (2), 171-185.
- Fernandes, E. and Pacheco, R. R. (2007) 'Airport Management: A Strategic Approach.' *Transportation* 34 (1), 129-142.
- Fisk, E. R. and Reynolds, W.D. (2010) *Construction Project Administration 9th Edition*. New Jersey: Prentice Hall.

Fitzgerald, J. D. and Cox, S. M. (2002) *Research Methods and Statistics in Criminal Justice: An Introduction 3rd Edition*. Belmont: Wadsworth Publishing.

Flinchbaugh, J. (2005) 'Lean Material Management.' *Material Handling Management* 60 (4), 34-35.

Flouris, T. G. and Lock, D. (2009) *Managing Aviation Projects from Concept to Completion*. UK: MPG Group.

Flynn, B. B. Schroeder, R. G. and Sakakibara, S. (1995) 'The Impact of Quality Management Practices on Performance and Competitive Advantages.' *Decision Sciences* 26 (5), 659-691.

Fombrun, C. J., Devanna, M. A. and Tichy, N. M. (1984) *Strategic Human Resource Management*. New York: John Wiley.

Forsyth, P. Niemeier, H. M. and Wolf, H. (2011) 'Airport Alliances and Mergers – Structural Change in the Airport Industry.' *Journal of Air Transport Management* 17 (1), 49-56.

Frey, B. S. and Osterloh, M. (2002) *Successful Management by Motivation: Balancing Intrinsic and Extrinsic Incentives*. Germany: Springer.

Gelder, J. (2012) *Classification* [online] available from <<http://www.cpic.org.uk>> [21 March 2016].

Gerrish, K. and Lacey, A. (2010) *The Research Process in Nursing*. Oxford: Wiley Blackwell.

Gidado, K.I. (1996) 'Project Complexity: The Focal Point of Construction Production Planning.' *Construction Management and Economics* 14 (3), 213-225.

- Gilbert, N. (2008) *Researching Social Life 3rd Edition*. London: SAGE Publications Ltd.
- Gillen, D. (2010) 'The Evolution of Airport Ownership and Governance.' *Centre for Transportation Studies*, 1-23.
- Golafshani, N. (2003) 'Understanding Reliability and Validity in Qualitative Research.' *The Qualitative Report* 8 (4), 597-607.
- Gorelick, C. Milton, N. and April, K. (2004) *Performance through Learning: Knowledge Management in Practice*. Routledge: UK.
- Gould, F. E. and Joyce, N. E. (2009) *Construction Project Management 3rd Edition*. New Jersey: Prentice Hall.
- Graham, A. (2008) *Managing Airport: An International Perspective 3rd Edition*. Oxford: Butterworth-Heinemann.
- Greenwood, M. and Anderson, E. (2009) 'I Used to be an Employee but Now I am a Stakeholder: Implication of Labeling Employees as Stakeholders.' *Asia Pacific Journal of Human Resources* 47 (2), 186-200.
- Crossan, F. (2003) 'Research Philosophy: Towards an Understanding.' *Nurse Researcher* 11 (1), 46-55.
- Grundy, T. (1998) 'Strategy Implementation and Project Management.' *International Journal of Project Management* 16 (1), 43-50.
- Guest, D. E. (1991) 'Personnel management: The End of Orthodoxy.' *British Journal of Industrial Relations* 29 (2), 149-76.
- Gunhan, S. and Arditi, D. (2005) 'Factors Affecting International Construction.' *Journal of Construction Engineering and Management* 131 (3), 273-282.

- Hackman, J. R. (1987) *The Design of work Teams*. New Jersey: Prentice Hall.
- Hallowell, M. R. Veltri, A. and Johnson, S. (2009) 'Safety and Lean.' *American Society of Safety Engineers* 54 (11), 22-27.
- Halpin, D. W. and Senior, B. A. (2012) *Construction Management 4th Edition*. United States: John Wiley and Sons.
- Hammer, D. K. (2011) 'Lean Information Management.' *Journal of Computing and Information Technology* 5 (3), 145-157.
- Hammersley, M. and Atkinson, P. (2007) *Ethnography: Principles in Practice 3rd Edition*. New York: Routledge.
- Hayes, N. (2002) *Managing Teams: A Strategy for Success 2nd Edition*. London: Thomson Learning.
- Hendricks, C. and Au, T. (2000) *Project Management for Construction: Fundamental Concepts for Owners, Engineers, Architects and Builders 2nd Edition*. New Jersey: Prentice Hall.
- Hendry, C. and Pettigrew, A. (1990) 'Human Resource Management: An Agenda for the 1990s.' *The International Journal of Human Resource Management* 1 (1), 17-43.
- Henry, A.E. (2008) *Understanding Strategic Management*. New York: Oxford University Press Inc.
- Henry, A.E. (2011) *Understanding Strategic Management 2nd Edition*. New York: Oxford University Press Inc.

- Hersey, P. Blanchard, K. H. and Johnson, D. E. (2008) *Management of Organizational Behaviour 9th Edition*. New Jersey: Pearson Education.
- Hillebrandt, P.M. (2000) *Economic Theory and the Construction Industry 3rd Edition*. London: Macmillan.
- Hitt, M., Ireland, D. and Hoskisson, R. (2007) *Strategic Management Competitiveness and Globalization: Concepts and Cases 7th Edition*. USA: Thomson South-Western.
- Ho, C. T. (2009) 'The Relationship between Knowledge Management Enablers and Performance.' *Industrial Management and Data System* 109 (1), 98-117.
- Hooper, P. (2002) 'Privatization of Airports in Asia.' *Journal of Air Transport Management* 8 (5), 289-300.
- Horn, R. (2009) *Researching and Writing Dissertations: A Complete Guide for Business and Management Students*. London: CIPD.
- Huang, T. C. (2001) 'The Effects of Linkage between Business and Human Resource Management Strategies.' *Personnel Review* 30 (2), 132-145.
- Hutchins, D. (2008) *Hoshin Kanri: The Strategic Approach to Continuous Improvement*. Aldershot: Gower Publishing Ltd.
- Hutchison, A. J., Johnston, L. H. and Breckon, J. D. (2010) 'Using QSR-NVivo to Facilitate the Development of a Grounded Theory Project: An Account of a Worked Example.' *International Journal of Social Research Methodology* 13 (4), 283-302.
- Huczynski, A. A. and Buchanan, D. (2001) *Organizational Behaviour: An Introductory Text 4th Edition*. Essex: Pearson.

Huselid, M. A. (1995) The Impact of Human Resource Management Practices on Turnover, Productivity and Corporate Financial Performance, *Academy of Management Journal* 38 (3), 635-672.

Huovinen, P. (2004) 'Applied Business-Management Research: How Do We Incorporate this Missing Link into Our Revaluing Construction Agenda?' *Presented at CIB World Building Congress*, 'Building for the Future.' Held May 2-7 2004 at Toronto. Rotterdam: CIB.

IATA (2015) *Airlines* [online] available from <<http://www.iata.org/Pages/airlines.aspx>> [20 May 2012].

Innes, J.E. and Booher, D.E. (1999) 'Consensus Building and Complex Adaptive Systems: A Framework for Evaluating Collaborative Planning.' *Journal of the American Planning Association* 65 (4), 412-23.

Jabrouni, H. Kamsu-Foguem, B. Geneste, L. and Vaysse, C. (2011) 'Continuous Improvement through Knowledge-guided Analysis in Experience Feedback.' *Engineering Applications of Artificial Intelligence* 24 (8), 1419-1431.

Jackson, P. and Price, C. M. (1994) *Privatization and Regulation: A Review of the Issues*. London: Longman.

Jalili, Y. A. Nasrin, S. Fakhimi, S. and Khakhian, Y. B. (2011) How Can We Systematically Manage Lessons Learned in Projects? *2nd International Conference on Construction and Project Management*. Held 2011 at Singapore. Singapore: IACSIT Press: 112-119.

Jennings, D. (2002) 'Strategic Management: An Evaluation of the Use of Three Learning Methods.' *Journal of Management Development* 21 (9), 655-665.

Jiang, X. (2009) 'Strategic Management for Main Functional Areas in an Organization.' *International Journal of Business and Management* 4 (2), 153-157.

Jolayemi, J. K. (2008) 'Hoshin Kanri and Hoshin Process: A Review and Literature Survey.' *Total Quality Management* 19 (3), 295-320.

Jung , J . Y. and Wang, Y. (2006) 'Relationship between Total Quality Management (TQM) and Continuous Improvement of International Project Management (CIIPM).' *Technovation* 26 (5-6), 716-722.

Junnonen, J.M. (1998) 'Strategy Formation in Construction Firms.' *Engineering, Construction and Architectural Management* 5 (2), 107-114.

Kadefors, A. (2004) 'Trust in Project Relationships – inside the Black Box.' *International Journal of Project Management* 22 (3), 175-182.

Kapur, A. (1995) 'Airport Infrastructure: The Emerging Role of the Private Sector.' *World Bank* 313, 1-100.

Karlsen, J. T. (2002) 'Project Stakeholder Management.' *Engineering Management Journal* 14 (4), 19-24.

Katzenbach, J. R. and Smith, D. K. (1993) *The Wisdom of Teams: Creating the High-performance Organization*. Boston: Harvard Business School Press.

Kaynak, H. (2003) 'The Relationship between Total Quality Management Practices and Their Effects on Firm Performance.' *Journal of Operations Management* 21 (4), 405-435.

Kazaz, A. and Ulubeyli, S. (2009) 'Strategic Management Practices in Turkish Construction Firms.' *Journal of Management in Engineering* 25 (4), 89-96.

Kefela, G.T. (2010) 'Understanding Organizational Culture and Leadership – Enhance Efficiency and Productivity.' *PM World Today* XII (I), 1-14.

Khalafallah, A. and El-Rayes, K. (2006) 'Minimizing Construction-Related Hazard in Airport Expansion Projects.' *Journal of Construction Engineering and Management* 132 (6), 562-572.

Khalafallah, A. and El-Rayes, K. (2008) 'Minimizing Construction-Related Security Risk during Airport Expansion Project.' *Journal of Construction Engineering and Management* 134 (1), 40-48.

Khalfan, M. M. A. McDermott, P. and Swan, W. (2007) 'Building Trust in Construction Projects. *Supply Chain Management: An International Journal* 12 (6), 385-391.

Khan, R. (2008) 'Role of Construction Sector in Economic Growth: Empirical Evidence from Pakistan Economy.' *First International Conference on Construction in Developing Countries* 'Advancing and Integrating Construction Education, Research & Practice.' Held August 4-5 2008 at Ramada Plaza Karachi Airport Hotel. Pakistan: 279-290.

Khang, D.B. and Moe, T.L. (2008) 'Success Criteria and Factors for International Development Project: A life-cycle-based framework.' *Project Management Journals* 39 (1), 72-84.

Kines, P. Andersen, L. P. S. Spangenberg, S. Mikkelsen, K. L. Dyreborg, J. and Zohar, D. (2010) 'Improving Construction Site Safety through Leader-based Verbal Safety Communication.' *Journal of Safety Research* 41 (5), 399-406.

Kirkman, B. L. and Rosen, B. (1999) 'Beyond Self-management: Antecedents and Consequences of Team Empowerment.' *The Academy of Management Journal* 42 (1), 58-74.

Kuhn, O. and Abecker, A. (1997) 'Corporate Memories for Knowledge Management in Industrial Practice: Prospect and Challenges.' *Journal of Universal Computer Science* 3 (8), 929-954.

- Kumari, S. Bamel, N. and Kumar, U. (2011) 'Links between Business Strategy and Human Resource Management Strategy in Select Indian Banks: An Empirical Study.' *The IUP Journal of Business Strategy* VII (3), 24-41.
- Lampel, J. (2001) 'The Core Competencies of Effective Project Execution: The challenge of diversity.' *International Journal of Project Management* 19 (8), 471–483.
- Longford, D. and Male, S. (2001) *Strategic Management in Construction 2nd Edition*. Oxford: Blackwell Science Ltd.
- Langley, A. (1988) 'The Roles of Formal Strategic Planning.' *Long Range Planning* 21 (3), 40-50.
- Latham, G. P. (2012) *Work Motivation: History, Theory, Research and Practice 2nd Edition*. London: SAGE Publications Ltd.
- Leedy, P. D. and Ormrod, J. E. (2004) *Practical Research: Planning and Design 7th Edition*. New Jersey: Pearson.
- Lemnek, S. (1988) *Qualitative Sozialforschung – Vol. 1: Methodologie*. Munich: Psychologie Verlags Union.
- Lerbinger, O. (2006) *Corporate Public Affairs: Interacting with Interest Groups, Media and Government*. London: Lawrence Erlbaum Associates.
- Lewis, T.M. (2007) 'Impact of Globalization on the Construction Sector in Developing Countries.' *Construction Management and Economics* 25 (1), 7- 23.
- Lewis, J. (2002) 'The Contribution of Research Findings to Practice Change.' *Journal of Integrated Care* 10 (1), 9-12.

- Liao, H. and Chuang, A. (2004) A Multilevel Investigation of Factors Influencing Employee Service Performance and Customer Outcomes. *Academy of Management Journal* 47 (1), 41-58.
- Liebowitz, J. and Megbolugbe, I. (2003) 'A Set of Frameworks to Aid the Project Manager in Conceptualizing and Implementing Knowledge Management Initiatives.' *International Journal of Project Management* 12 (3), 189-198.
- Lincoln, Y. S. and Guba, E. G. (1985) *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publication.
- Ling, F. Y. Y. and Tran, H. B. T. (2012) 'Ingredients to Engender Trust in Construction Project Teams in Vietnam.' *Construction Innovation* 12 (1), 43-61.
- Locke, K. (2005) *Grounded Theory in Management Research*. London: SAGE Publications Ltd.
- Loosemore, M. Dainty, A. and Lingard, H. (2003) *Human Resource Management in the Construction Projects: Strategic and Management Operational Approaches*. New York: Taylor and Francis.
- Love, P. D. Holt, G. D. and Li, H. (2002) 'Triangulation in Construction Management Research.' *Engineering, Construction and Architectural Management* 9 (4), 294-303.
- Lundkvist, R. Meiling, J. H. and Sandberg, M. (2014) 'A Proactive Plan-Do-Check-Act Approach to Defect Management Based on a Swedish Construction Project.' *Construction Management and Economics* 32 (11), 1051-1065.
- Male, S. and Stocks, R. (1991) *Competitive Advantage in Construction*. Oxford: Butterworth-Heinemann.

Mathur, V. N. Price, A. D. F. and Austin, S. (2008) 'Conceptualizing Stakeholder Engagement in the Context of Sustainability and its Assessment.' *Construction Management and Economics* 26 (6), 601-609.

May, T. (2011) *Social Research: Issues, Methods and Research*. London: McGraw-Hill International.

Mazzucato, M. (2006) *Strategy for Business*. London: SAGE Publication Ltd.

Mcdermott, P., Khalfan, M. A. and Swan, W. (2005) 'Trust in Construction Projects.' *Journal of Financial Management of Property and Construction* 10 (1), 19-31.

Meho, L. I. (2006) 'E-mail Interviewing in Qualitative Research: A Methodological Discussion.' *Journal of the American Society for Information Science and Technology* 57 (10), 1284-1295.

Melcrum (2007) *The Practitioner's Guide to Essential Techniques for Employee Engagement: Tips, Tools and Practical Advice for Building a Committed Workforce*. USA: Melcrum Publishing Ltd.

Meredith, J. R. and Mantel, S. J. (2009) *Project Management: A Management Approach 7th Edition*. USA: John Wiley and Sons.

Merriam, S. B. (1998) *Qualitative Research and Case Study Applications in Education*. San Francisco: Jossey-Bass.

Miles, M. B. and Huberman, A. M. (1994) *Qualitative Data Analysis 2nd Edition*. London: SAGE Publication Ltd.

Milosevic, D.Z. and Srivannaboon, S. (2006) 'A Theoretical Framework for Aligning Project Management with Business Strategy.' *Project Management Journal* 37 (3), 98-110.

- Milton, N. (2011) *The Lessons Learned Handbook: Practical Approaches to Learning from Experience*. Chandos Publishing: Oxford.
- Mintzberg, H. (1987) 'Crafting strategy.' *Harvard Business Review* 65 (4), 66–75.
- Mintzberg, H., Lampel, J., Quinn, J.B. and Ghoshal, S. (2003) *The Strategy Process: Concept, Contexts and Cases*. UK: Pearson Education Limited.
- Mintzeberg, H., Ahlstrand, B. and Lampel, J. (2009) *Strategy Safari Your Complete Guide through the Wilds of Strategic Management 2nd Edition*. Edinburgh: Pearson Education.
- Mitchell, R. K., Agle, B. R. and Wood, D. J. (1997) 'Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Count.' *Academy of Management Review* 22 (4), 853-886.
- Moavenzadeh, F. (1994) *Global Construction and the Environment: Strategies and Opportunities*. USA: John Wiley and Sons. Inc.
- Morris, P. and Jamieson, A. (2004) *Translating Corporate Strategy into Project Strategy: Realizing Corporate Strategy through Project Management*. Pennsylvania: Project Management Institute.
- Morton, R. (2008) *Construction UK: Introduction to the industry 2nd Edition*. Oxford: Blackwell.
- Mulligan, P. Hatten, K. and Miller, J. (1996) 'From Issue-based Planning to Hoshin: Different Styles for Different Situations.' *Long Range Planning* 29 (4), 473-484.
- Naaranoja, M., Haapalainen, P. and Lonka, H. (2007) 'Strategic Management Tools in Project Case Construction Project.' *International Journal of Project Management* 25 (7), 659-665.

- Naoum, S.G. (2007) *Dissertation Research and Writing for Construction Students 2nd Edition*. UK: Elsevier Ltd.
- Naoum, S. G. (2013) *Dissertation Research and Writing for Construction Students 3rd Edition*. USA: Routledge.
- Neufville, R.D. and Odoni, A.R. (2003) *Airport Systems: Planning Design and Management*. New York: McGraw-Hill.
- NIST (2014) Baldrige Excellence Framework [online] available from <www.nist.gov/baldrige/> [27 December 2014].
- Ngowi, A. B. (2007) 'The Role of Trustworthiness in the Formation and Governance of Construction Alliances.' *Building and Environment* 42 (4), 1828-1835.
- Ngowi, A., Pienaar, E., Talukhaba, A. and Mbachu, J. (2005) 'The Globalization of the Construction Industry: A review.' *Building and Environment* 40 (1), 135-141.
- Nguyen, L.D., Ogunlana, S.O. and Lan, D.T.X. (2004) 'A Study on Project Success Factors in Large Construction Projects in Vietnam.' *Engineering, Construction and Architectural Management* 11 (6), 404- 413.
- Noble, H. and Smith, J. (2015) 'Issues of Validity and Reliability in Qualitative Research.' *Evidence-Based Nursing* 18 (2), 34-36.
- Odusami, K. T. Lyagba, R. R. O. and Omirin, M. M. (2003) 'The Relationship between Project Leadership, Team Composition and Construction Project Performance in Nigeria.' *International Journal of Project Management* 21 (7), 519-527.
- Office for National Statistics (2014) *A Report on the Output in the Construction Industry, July 2014 and New Orders Q2 2014*. UK: ONS.

Ofori, G. (1990) *The Construction industry: Aspects of its Economics and Management*. Singapore: NUS Press.

O'Leary, D. E. and Selfridge, P. (2000) 'Knowledge Management for Best Practice.' *Communication of the ACM* 43 (11), 12-24.

Oliver, D.G., Serovich, J.M. and Mason, T.L. (2005) 'Constraints and Opportunities with Interview Transcription: Towards Reflection in Qualitative Research.' *Social Forces Journal* 84 (2), 1273-1289.

Oum, T.H. Yan, J. and Yu, C. (2008) 'Ownership Forms Matter for Airport Efficiency: A Stochastic Frontier Investigation of Worldwide Airports.' *Journal of Urban Economics* 64 (2), 422-435.

Parker, D. (1999) 'The performance of BAA before and after Privatization.' *Journal of Transport Economics and Policy* 33 (2), 133-145.

Patanakul, P., Shenhar, A. J. and Milosevic, D. (2006) 'Why Different Projects Need Different Strategies.' *Proceedings of the PMI Research Conference*. Held July 16-19 2006 at Montreal, Canada. Pennsylvania: Project Management Institute.

Patanakul, P. and Shenhar, A. J. (2012) 'What Project Strategy Really is: The Fundamental Building Block in Strategic Project Management.' *Project Management Journal* 43 (1), 4-20.

Patton, M. Q. (2002) *Qualitative Research and Evaluation Methods 3rd Edition*. California: SAGE Publications Ltd.

Pearce J. and Robinson R. (2003) *Strategic Management: Formulation, Implementation and Control 8th Edition*. Columbus: McGraw Hill.

Pearce, C. L. (2004) 'The Future of Leadership: Combining Vertical and Shared Leadership to Transform Knowledge Work.' *Academy of Management Executive* 18 (1), 47-57.

Peat, J. Mellis, C. Williams, K. and Xuan, W. (2002) *Health Science Research: A Handbook of Quantitative Methods*. London: SAGE Publications Ltd.

Perumal, V. and Abu Bakar, A. (2011) 'The Needs for Standardization of Document Towards an Efficient Communication in the Construction Industry.' *World Applied Sciences Journal* 13 (9), 1988-1995.

Petre, M. and Rugg, G. (2010) *The Unwritten Roles of PhD Research 2nd Edition*. England: Open University Press.

Pitsis, T. S., Clegg, S. R., Marosszeky, M. and Rura-Polley, T. (2003) 'Construction the Olympic Dream: A Future Perfect Strategy of Project Management.' *Organization Science* 14 (5), 574-590.

Pocock, J. B., Hyun, C. T., Liu, L. Y. and Kim, M. K. (1996) 'Relationship between Project Interaction and Performance Indicator.' *Journal of Construction Engineering and Management* 122 (2), 165-176.

Polit, D. F. and Hungler, B. (1995) *Nursing Research: Principles and Methods*. Philadelphia: Lippincott Williams and Wilkins.

Porter, M. (1996) 'What is Strategy?' *Harvard Business Review* 74 (6), 61-78.

Price, A.D.F., Ganiev, B.V. and Newson, E. (2003) 'Changing Strategic Management Practice within the UK Construction Industry.' *Strategic Change* 12 (7), 347-366.

Project Management Institute (2000) *A Guide to the Project Management Body of Knowledge*. Pennsylvania: PMI.

Pullin, J. (2005) 'Lean Leadership.' *Professional Engineering* 18 (14), 31-31.

Purcell, J. (1993) 'The challenge of Human Resource Management for Industrial Relations Research and Practice.' *International Journal of Human Resource Management* 4 (3), 511–27.

Purcell, J. and Ahlstrand, B. (1994) *Human Resource Management in the Multidivisional Company*. Oxford: Oxford University Press.

Purcell, J. Kinnie, K. Hutchinson, S. Rayton, B. and Swart, J (2003) *Understanding the People and Performance Link: Unlocking the Black Box*. London: Chartered Institute of Personnel and Development.

Rabey, G. (2003) 'The Paradox of Teamwork.' *Industrial and Commercial Training* 35 (4) 158-162.

Raftery, J., Pasadilla, B. Chiang, Y.H., Hui, E.C.M. and Tang, B.S. (1998) 'Globalization and Construction Industry Development: Implications of Recent Developments in the Construction Sector in Asia.' *Construction Management and Economics* 16 (6), 729-737.

Raiden, A.B., Dainty, A.R.J. and Neale, R.H. (2008) 'Understanding Employee Resourcing in Construction Organizations.' *Construction Management and Economics* 26 (11), 1133-1143.

Raiden, A. Dainty, A and Neale, R. (2009) *Employee Resourcing in the Construction Industry: Strategic Considerations and Operational Practice*. USA: Taylor and Francis.

Ratcliffe, J. W. (1983) 'Notions of Validity in Qualitative Research Methodology.' *Science Communication* 5 (2), 147-167.

Renney, J. and Deck, M. (1995) 'Making Teams Work: Lessons from the Leaders in New Product Development.' *Planning Review* 23 (4), 7-12.

Redman, T. and Wilkinson, A. (2001) *Contemporary Human Resource Management*. Essex: Pearson.

Rhodes, L. and Dawson, R. (2013) 'Lessons Learned from Lessons Learned.' *Knowledge and Process Management* 20 (3), 154-160.

RIBA (2013) *RIBA Plan of Work 2013 Overview* [online] available from <http://www.architecture.com/files/ribaprofessionalservices/practice/ribaplanofwork2013overview.pdf> [20 December 2014].

Richards, L. (2015) *Handling Qualitative Data: A Practical Guide 3rd Edition*. London: SAGE Publications Ltd.

Right Management (2010) *Organizational Effectiveness: Discovering How to Make It Happen* [Online] available from <http://www.viatec.ca/document/2010/05/organizational-effectiveness-discovering-how-make-it-happen-study> [15 January 2015].

Ritchie, J. and Lewis, J. (2003) *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. London: SAGE Publications Ltd.

Roome, N. and Wijen, F. (2006) 'Stakeholder Power and Organizational Learning in Corporate Environmental Management.' *Organization Studies* 27 (2), 235–63.

Ross, W. S. (2003) *Continuous Improvement*. UK: Management Books 2000 Ltd.

Rudd, J.M., Greenley, G.E., Beatson, A.T. and Lings, I.N. (2008) 'Strategic Planning and Performance: Extending the Debate.' *Journal of Business Research* 61 (2), 99-108.

Salas, E. Sims, D. E. and Burke, C. S. (2005) 'Is There a Big Five in Teamwork?' *Small Group Research* 36 (5), 555-599.

- Saldana, J. (2009) *The Coding Manual for Qualitative Researchers*. London: SAGE Publications Ltd.
- Sanchez, L. and Blanco, B. (2014) 'Three Decades of Continuous Improvement.' *Total Quality Management and Business Excellence* 25 (9), 986-1001.
- Sanz-Valle, R. Sabater-Sanchez, R. and Aragon-Sanchez, A. (1999) 'Human Resource Management and Business Strategy Links: An Empirical Study.' *The international Journal of Human Resource Management* 10 (4), 655-671.
- Sapsford, R. and Jupp, V. (2008) *Data Collection and Analysis 2nd Edition*. London: SAGE Publications Ltd.
- Sarantakos, S. (1994) *Social Research*. London: Sage Publication.
- Sawacha, E., Naoum, S. and Fong, D. (1999) 'Factors Affecting Safety Performance on Construction Sites.' *International Journal of Project Management* 17 (5), 309-315.
- Scarnati, J. T. (2001) 'On Becoming a Team Player. Team Performance Management.' *An International Journal* 7 (1/2), 5-10.
- Scarborough, H. Swan, J. and Preston, J. (1999) *Knowledge Management: A literature review*. London: Institute of Personnel and Development.
- Schein, E.H. (1992) *Organizational Culture and Leadership 2nd Edition*. San Francisco: Jossey-Bass Inc.
- Schindler, M. and Eppler, M. J. (2003) 'Harvesting Project Knowledge: A Review of Project Learning Methods and Success Factors.' *International Journal of Project Management* 21 (3), 219-228.

Schmidt, J. B. Montoya-Weiss, M. M. and Massey, A. P. (2001) 'New Product Development Decision-making Effectiveness.' *Decision Science* 32 (4), 575-600.

Scott, C., Jaffe, D. and Tobe, G. (1993) *Organizational Vision, Values and Mission: Building the Organization of Tomorrow*. USA: Crisp Learning.

Sears, S.K., Sears, G.A. and Clough, R.H. (2008) *Construction Project Management: A practical Guide to Field Construction Management*. Canada: John Wiley & Sons.

Sheppeck, M. A. and Militello, J. (2000) 'Strategic HR Configuration and Organizational Performance.' *Human Resource Management*, 39 (1), 5-16.

Shenhar, A. J. and Dvir, D. (2007) *Reinventing Project Management*. Boston: Harvard Business School Press.

Shiba, S. and Walden, D. (2001) *Four Practical Revolutions in Management – Systems for Creating Unique Organizational Capability*. USA: Productivity Inc.

Sibson, R. E. (1992) *Strategic Planning for Human Resource Management*. New York: AMACOM.

Smith, J. (1998) 'Strategies for Start-ups.' *Long Range Planning* 31 (6), 857–872.

Smith, J. and Love, P.E.D. (2004) 'Stakeholder Management during Project Inception: Strategic Needs Analysis.' *Journal of Architectural Engineering* 10 (1), 22–33.

Söderlund, J. (2004) 'On the Broadening Scope of the Research on Projects: A Review and a Model for Analysis.' *International Journal of Project Management* 22 (8) 655-667.

Sokovic, M. Pavletic, D. and Pipan, K. (2010) 'Quality Improvement Methodologies – PDCA Cycle, RADAR Matrix, DMAIC and DFSS.' *Journal of Achievements in Materials and Manufacturing Engineering* 43 (1), 476-483.

Sproull, B. (2009) *The Ultimate Improvement Cycle*. USA: Taylor and Francis Group.

Stake, R. E. (1995) *The Art of Case Study Research*. Thousand Oaks, CA: Sage.

Stebbing, L (1990) *Quality Management in the Service Industry*. Great Britain: Ellis Horwood Limited.

Stenbacka, C. (2001) 'Qualitative Research Requires Quality Concepts of its own.' *Management Decision* 39 (7), 551-555.

Stolletz, R. (2011) 'Analysis of Passenger Queues at Airport Terminals.' *Research in Transportation Business and Management* 1 (1), 144-149.

Storey, J. (1989) *New Perspective on Human Resource Management*. London: Routledge.

Storey, J. (1994) *New Wave Manufacturing Strategies: Organizational and Human Resource Management Dimensions*. London: Chapman.

Strauss, A. and Corbin, J. (1990) *Basic Qualitative Research: Grounded Theory Procedures and Techniques*. SAGE Publications Ltd.

Tabassi, A. A. and Abu Bakar A. H. (2009) 'Training, Motivation and Performance: The Case of Human Resource Management in Construction Project in Mashhad, Iran.' *International Journal of Project Management* 27 (5), 471-480.

Tabassi, A. A. Ramli, M. and Abu Bakar, A. (2011) 'Training, Motivation and Teamwork Improvement: The Case of Construction Firms.' *African Journal of Business Management* 5 (14), 5627-5636.

Tang, W. Qiang, M. Duffield, C. F. Young, D. M. and Lu, Y. (2008) 'Incentives in the Chinese Construction Industry.' *Journal of Construction Engineering and Management* 7 (134), 457-467.

Taylor, S. and Bogdan, R. (1998) *Introduction to Qualitative Research Methods 3rd Edition*. New York: John Wiley and Sons.

Thompson, A. (1999) *Architectural Design Procedures 2nd Edition*. UK: Routledge.

Toor, S.R. and Ofori, G. (2008) 'Leadership for Future Construction Industry: Agenda for Authentic Leadership.' *International Journal of Project Management* 26 (6), 620-630.

Trochim, W. (2000) *The Research Method Knowledge Base 2nd Edition*. Cincinnati: Atomic Dog Publishing.

Turner, J. R. (1999) *The Handbook of Project-based Management: Improving the Processes for Achieving Strategic Objectives 2nd Edition*. London: McGraw-Hill Companies.

Tyler (2014) Tony Tyler's State of the Industry, Doha [online] available from <<https://www.iata.org/pressroom/speeches/Pages/2014-06-02-1.aspx>> [26 January 2015].

Upham, P. Maughan, J. Raper, D. and Thomas, C. (2003) *Towards Sustainable Aviation*. USA: Earthscan.

Val J, A. and Dee, G. (2000) 'Customer Relationships.' *Executive Excellence* 17 (2), 12-12.

Veal, A. J. (2005) *Business Research Method: A Managerial Approach*. French Forest: Pearson Education Australia.

Vitae (2011) *Vitae Researcher Development Framework: Briefing for Postgraduate*

Researchers [online] available from <<https://www.vitae.ac.uk/vitae-publications/rdf-related/researcher-development-framework-rdf-briefing-postgraduate-researcher-vitae-2011.pdf>> [5 August 2015].

Von Krogh, G. Nonaka, I. and Rechsteiner, L. (2012) 'Leadership in Organizational Knowledge Creation: A Review and Framework.' *Journal of Management Studies* 49 (1), 240-277.

Walker, A. (1996) *Project Management in Construction 3rd Edition*. Reading: Addison-Wesley Pub Co.

Walker, A. (2007) *Project Management in Construction 5th Edition*. UK: Blackwell Publishing.

Walliman, N. (2006) *Social Research Methods*. London: Sage Publications Ltd.

Walton, R. E. (1985) 'From Control to Commitment in the Workplace.' *Harvard Business Review* 63 (1), 76–84.

Wang, K. J. Hong, W. C. Chen, S. H. and Jiang, J. T. (2011) 'Strategic Development Trend and Key Factors Analysis of Airport City in Taiwan.' *Journal of Transport Geography* 19 (4), 807-820.

Weber, R. Aha, D. W. and Becerra-Fernandez, I. (2001) 'Intelligent Lessons Learned Systems.' *Expert System with Applications* 20 (1), 17-34.

Whittington, R. (2001) *What is Strategy – and Does it Matter? 2nd Edition*. London: Thomson Learning.

Willis, J. W. (2007) *Foundation of Qualitative Research: Interpretive and Critical Approaches*. California: Sage Publication.

Williams, T. (2005) 'Assessing and Moving on From the Dominant Project Management Discourse in the Light of Project Overruns.' *IEEE Transaction on Engineering Management* 52 (4), 497-508.

Williams, T. (2008) 'How Do Organization Learn Lessons from Projects; and Do They?.' *IEEE Transaction on Engineering Management* 55 (2), 248-266.

Winch, G. (1998) 'The Construction Firm and the Construction Project: A Transaction Cost Approach.' *Construction Management and Economics* 7 (4), 331-345.

Womack, J. P. and Jones, D. T. (2003) *Lean Thinking 2nd Edition*. New York: Free Press.

Wood, S. (1999), Human Resource Management and Performance, *International Journal of Management Review* 1 (4), 367-413.

Wood, S. and Albanese, M. (1995) 'Can You Speak of a High Commitment Management on the Shop Floor?' *Journal of Management Studies* 32 (2), 215-247.

Wood, S. and Menezes, L. (1998) 'High Commitment Management in the UK: Evidence from the Workplace Industrial Relations Survey, and Employers, Manpower and Skills Practices Survey.' *Human Relations*, 51 (4), 485-515.

Worrall, L., Harris, K., Stewart, R., Thomas, A., and McDermott, P. (2010) 'Barriers to Women in the UK Construction Industry.' *Engineering Construction and Architectural Management* 17 (3), 268-281.

Wright, P. M. and McMahan, G. C. (1992) 'Theoretical Perspectives for Strategic Human Resource Management.' *Journal of Management* 18 (2), 295-320.

Xia, B. and Chan, A.P.C (2011) 'Measuring Complexity for Building Projects: A Delphi Study.' *Engineering, Construction and Architectural Management* 19 (1), 7-24.

Yankov, L. and Kleiner B.H. (2001) 'Human Resources Issues in the Construction Industry.' *Management Research News* 24 (3/4), 101-105.

Ye, K., Shen, L., and Zuo, J. (2013) 'Utilizing the Linkage between Domestic Demand and the Ability to Export to Achieve Sustainable Growth of Construction Industry in Developing Countries.' *Habitat International* 38, 135-142.

Yin, R. C. (2003) *Case Study Research: Design and Methods*. California: Sage Publication.

Yokomi, M. (2005) 'Evaluation of Technical Efficiency at Privatized Airports: Case of BAA Plc.' *A Paper Presented at the Air Transport Research Society (ATRS) Conference*. Held July 3-6 2005 at Rio de Janeiro. Brazil: 8-20.

Young, C. S. and Samson, D. (2008) 'Project Success and Project Team Management: Evidence From Capital Projects in The Process Industries.' *Journal of Operations Management* 26 (6), 749-766.

Young, S. B. and Wells, A. T. (2011) *Airport Planning and Management 6th Edition*. New York: McGraw-Hill.

**MANAGING AND CONTROLLING
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NASSER ALNASSERI

MSc Construction Project Management

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ABSTRACT

During the last few decades, strategic management and strategic human resource management theories have received a great deal of attention in many industrial sectors. The complex and constantly changing business environment has driven large construction companies more than ever before to reflect on the interplay between their organisational strategies and their strategic management processes, tools and techniques. This is despite the great value of human capital for an organisation's strategic flexibility within different sets of environmental evolutions. This includes people in various positions, administrative, professional, managerial and unskilled, as well as numerous project stakeholders. Several researchers are increasingly interested in applying strategies and human-related studies within the construction industry; however, an integrated study of these two factors has been notably lacking, particularly in an airport context where the challenges and difficulties of managing construction projects are high. This doctoral thesis contributes to the existing literature by exploring the unique characteristics of an airport construction environment, along with reporting the findings of the impact that different airport ownership forms have on construction management efficiency. Through integrating numerous theories and concepts associated with project strategies, strategic human resource management and various efficiency management attributes, this research project presents a unique strategic framework that offers a structured approach to support airport holding bodies. Research primary data were collected following semi-structured interviews with senior construction project managers of airport operators within three distinct airport organisations in terms of their ownership structures. The resultant findings provide insight into the many differences between the case studies in term of project management practices. Furthermore, an explanation of the key practices that influence the occurrence of project success were identified. This doctoral investigation identified there is a need for flexibility and scalability aligned with adopting the strategic framework and engaging its conceptual application with actual management and controlling practices. In essence, the research framework was developed for each category of airport organisation, where an airport organisation is encouraged to focus its efforts on managing the most important framework components which are needed for effective improvement of management practices and, accordingly, to achieve expectations. The resulting theoretical framework provides a unique tool for airport operators to apply their project management knowledge effectively in order to realize complex projects and to secure potential efficiency gains. This study therefore provides a

novel theoretical insight into the strategic management of human resources during airport construction projects. The primary application of the strategic framework is concerned with managing and controlling existing airport construction projects, particularly refurbishment or extension projects, however this could be also applied to new airport construction projects where the factors affecting strategic management and strategic human resource management anticipated to be different to those studied during this investigation. This has paved the way for future investigations to be conducted to tackle this dichotomy and further understand the intriguing aspects of airport construction business.

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1. Appendix A

The Construction Industry Classification – Uniclass2015

Appendix – A

The Construction Industry Classification – Examples of Uniclass2015 Classification

	Code	Group	Sub group	Section	Object	Title
Complexes						
314	Co_75_30_10	75	30	10		Telecommunications complexes
315	Co_75_30_20	75	30	20		Telecommunications networks
316	Co_80	80				Transport complexes
317	Co_80_05	80	05			Aerospace complexes
318	Co_80_05_02	80	05	02		Airports and airfields
319	Co_80_05_38	80	05	38		Heliports
320	Co_80_20	80	20			Cable transport complexes
321	Co_80_20_02	80	20	02		Aerial tramway complexes
Entities						
333	En_75_80	75	80			Protection entities
334	En_80	80				Transport entities
335	En_80_05	80	05			Aerospace entities
336	En_80_05_01	80	05	01		Air traffic control towers
337	En_80_05_02	80	05	02		Aircraft hangars
338	En_80_05_60	80	05	60		Passenger terminal buildings
339	En_80_20	80	20			Cable transport entities
340	En_80_20_11	80	20	11		Cable car entities
341	En_80_20_12	80	20	12		Cable car stations
Activities						
557	Ac_80_10_06	80	10	06		Baggage claiming
558	Ac_80_10_07	80	10	07		Baggage handling
559	Ac_80_10_08	80	10	08		Baggage loading
560	Ac_80_10_12	80	10	12		Cargo handling
561	Ac_80_10_13	80	10	13		Cargo loading
562	Ac_80_10_20	80	10	20		Customs controlling
563	Ac_80_10_60	80	10	60		Passenger arriving
564	Ac_80_10_61	80	10	61		Passenger departing
565	Ac_80_10_62	80	10	62		Passenger disembarking
566	Ac_80_10_63	80	10	63		Passenger embarking
567	Ac_80_10_64	80	10	64		Passenger gathering
568	Ac_80_10_65	80	10	65		Passport controlling

Figure 1.1: The Seven Core Tables of Uniclass2015 Classification (NBS, 2016)

The Construction Industry Classification – Examples of Uniclass2015 Classification

	Code	Group	Sub group	Section	Object	Title
Spaces/Locations						
545	SL_80_10_06	80	10	06		Baggage claim areas
546	SL_80_10_07	80	10	07		Baggage handling areas
547	SL_80_10_09	80	10	09		Boarding areas
548	SL_80_10_10	80	10	10		Bus stops
549	SL_80_10_12	80	10	12		Cargo handling areas
550	SL_80_10_13	80	10	13		Cargo loading areas
551	SL_80_10_16	80	10	16		Concourses
552	SL_80_10_20	80	10	20		Customs control areas
553	SL_80_10_33	80	10	33		Gangways
554	SL_80_10_55	80	10	55		Passenger gates
555	SL_80_10_60	80	10	60		Passport control offices
Elements						
62	EF_75_10	75	10			Communication
63	EF_75_30	75	30			Signalling
64	EF_75_40	75	40			Security
65	EF_75_50	75	50			Safety and protection
66	EF_75_60	75	60			Environmental safety
67	EF_75_70	75	70			Control and management
Systems						
1959	Ss_80_20_06	80	20	06		Baggage handling systems
1960	Ss_80_20_06_04	80	20	06	04	Airport baggage handling systems
1961	Ss_80_20_10	80	20	10		Bulk material conveying systems
1962	Ss_80_20_11	80	20	11		Cargo handling systems
1963	Ss_80_20_23	80	20	23		Document conveying systems
Products						
6007	Pr_70_75	70	75			Communications products
6008	Pr_70_75_01	70	75	01		Aeronautical lighting products
6009	Pr_70_75_01_01	70	75	01	01	Aeronautical ground lighting
6010	Pr_70_75_01_02	70	75	01	02	Airfield guidance signs
6011	Pr_70_75_01_03	70	75	01	03	Azimuth guidance for nose-in stand
6012	Pr_70_75_01_13	70	75	01	13	Constant current regulators
6013	Pr_70_75_01_47	70	75	01	47	Lighting beacon

Figure 1.1: The Seven Core Tables of Uniclass2015 Classification (NBS, 2016)

2. Appendix B

Construction Project Delivery Methods

Appendix – B

2.1 Construction Project Delivery Methods

2.1.1 Design/Bid/Build

In this approach (DBB), the project owner completes the design activities by employing an architect engineer or a designer. Following this, a separate contract with a construction professional delivers and completes the project as shown in Figure 1.1. An owner may hire an architect or a construction manager to administer the contract during construction process. Alternatively, he may have in-house people who perform the management task.

By adopting this method, owners identify project construction cost at the beginning of the work. The level of risk is, accordingly, reduced throughout the project stages and project activities are more likely to proceed smoothly. Gould and Joyce (2009) have argued that involving a contractor after the design process is not effective. However, some clients overcome this by having construction professionals in their project team or external construction consultants during the design process. Indeed, this enhances the efficiency of design activities, but is not as effective as having the professional, who will actually build the project, engaged earlier.

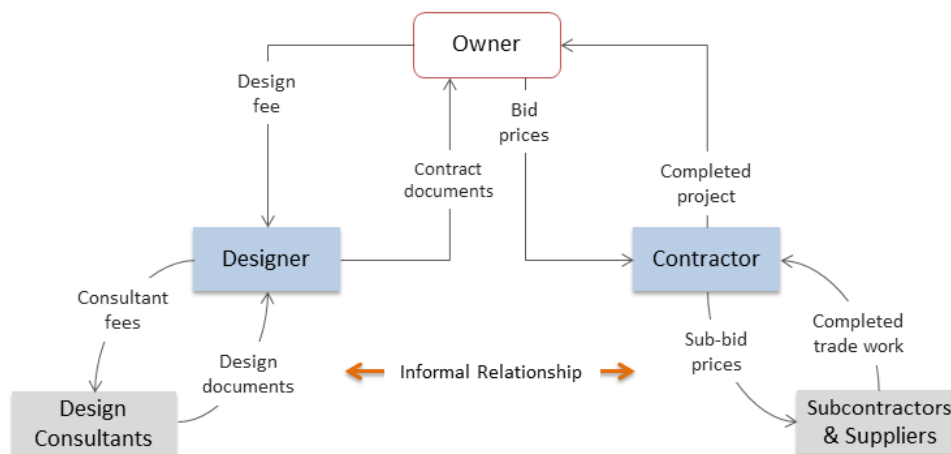


Figure 2.1: Design/Bid/Build Approach (Gould and Joyce, 2009: 83)

2.1.2 Design/Build

As shown in Figure 1.2, in design build (DB) strategy, a single organisation provides design and construction services and completes the entire task for the project owner. This organisation may not be a single entity; it can also take the form of joint-venture cooperation setting where more than one organisation works contractually together in a single project. This approach is used in complex and highly technical projects, e.g. industrial construction projects, and projects that have a tight scheduled time frame (Halpin and Senior, 2012). Accordingly, organisations are specialised in particular areas and offer DB service. During this procurement method, the project owner is less involved in day-to-day communication and has a single point of contact and responsibility over the project life-cycle. Good communication will exist also between the design and construction team from a project's early stages; this allows both activities to be done in parallel. Accordingly, construction works can be initiated on site prior to the completion of the design phase, which allows the project to be fast-tracked (Fisk and Reynolds, 2010). As design and construction team coordination is within the same contract agreement, this allows easier project scope changes. In contrast to DBB delivery method, it is difficult for the owner to know the actual project cost until part of the project is complete. In comparison, a conceptual budget is an owner method for entering a design/build arrangement. This might raise the risk of quality sacrifices, as the design and construction team try to make the scope fit the client's expected price to protect their profit.

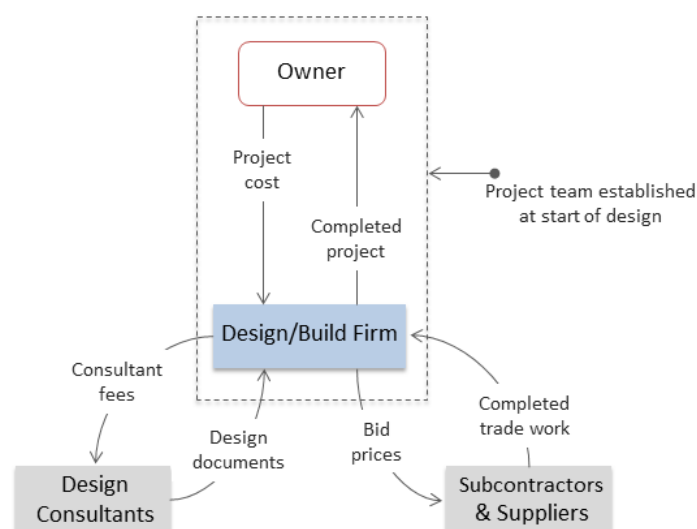


Figure 2.2: Design/Build Approach (Gould and Joyce, 2009: 86)

2.1.3 Construction Management

The construction management procurement method means that a construction management (CM) organisation represents a client and acts on his behalf in terms of group management activities as shown in Figure 1.3. The project owner may involve a designer early in the preconstruction phase, and work directly associated with construction is provided and organised by the CM organisation. Indeed, the major functions of the CM firm and its responsibilities vary depending on the project involvement phase, whether during the predesign, design or construction phase. According to Halpin and Senior (2012), in most CM agreements, the CM organisation establishes a contract awarding procedures to all project parties, architect/engineers, principle suppliers and contractors. Following the formation of contractual relationships, the CM firm manages and controls site activities and everybody involved in the project, including subcontractors and off-site fabricators. Thus, the CM body may provide a comprehensive project team of both office and field personnel, including engineers, project manager, schedulers, estimators, accountants, construction coordinators and many others (Fisk and Reynolds, 2010).

Gould and Joyce (2009) stated that by using construction management arrangement a good level of communication is established early in the design and construction phases between all project key members, the owner, the designer and the contractor. Such communication continues also throughout the whole project. This close communication environment makes scope changes over project phases not as difficult as in DBB approach. This method requires effective and efficient collaboration and communication practices between people as they engage together early, and allows for a fast-tracking project where they can manage to develop all necessary management and coordination schedules. However, if any of the key project players becomes uncommunicative, disrespectful or uncooperative, the use of CM procurement will be negatively affected. Shared information, transparency and mutual respect between all project players are highly suggested in order to benefit from CM delivery method.

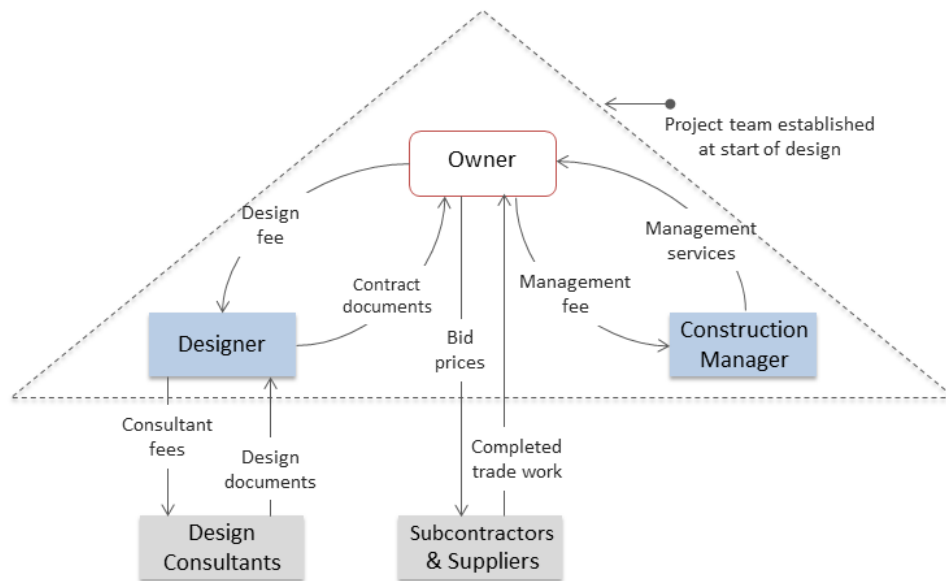


Figure 2.3: Construction Management Approach (Gould and Joyce, 2009: 89)

3. Appendix C

RIBA Plan of Work

Appendix – C

3.1 RIBA Plan of Work

3.1.1 Stage 0 – Strategy Definition

Strategic definition phase is initiated when an organisation's strategic managers discuss various opportunities and the project concept, ask the right questions, appraise and define project strategic perspectives before even developing the project brief details. A proper consideration of a client's business case and the strategic brief is the main focus (RIBA, 2013).

3.1.2 Stage 1 – Preparation and Brief

The preparation and brief is a very important stage to achieve a high level of project success, ensuring that the project design activities, the following stage, are as productive and effective as possible. During this stage various crucial activities need to be completed in parallel. Initial project brief and feasibility studies are developed in this stage. Following this, the project team is assembled and each party's roles, responsibilities and risks are defined and explained. Project information is also shared between the parties involved (RIBA, 2013).

3.1.3 Stage 2 – Concept Design

This stage has been designed to map the former stage and it is formed according to initial project brief requirements. During this stage, much information is exchanged and several project strategies developed: cost information, construction strategy, health and safety strategy, maintenance and operational strategy and project execution plan. It is vital to review the brief throughout the concept stage and issue the final project brief version, in order to exchange project information effectively (RIBA, 2013).

3.1.4 Stage 3 – Developed Design

The lead designer plays a significant role in this stage, when the project concept design is further developed. An iteration process is required among parties involved in this stage, and the use of design workshops is encouraged in order to engage efficiently the different parties

and to involve them in the project. Cost information can be aligned to project budget once the lead designer has completed his task. Different strategies that were developed during Stage 2 should be reviewed and developed further along by implementing change control procedures. The information and guidance of specialist subcontractors' design work, which will take place in the following Stage 4, may be considered for the developed design stage (RIBA, 2013).

3.1.5 Stage 4 – Technical Design

Project technical definition and specialist contractors' design work is developed and concluded at this stage. There is coordination during the previous stage between the different design processes; having architectural, building services and structural engineering means that each party is able to develop its technical design independently. Once the design team completes its work as defined in the design programme and there is agreement between project parties, specialist contractors can start their design works. At the end of the technical design stage, a completed and detailed view of the design can be developed and construction work, Stage 5, is ready to proceed (RIBA, 2013).

3.1.6 Stage 5 – Construction

According to the developed construction programme, the building is constructed on the project site. Resolution of design queries from site activities is also a main objective of this stage. Administration and supervision of different activities on the construction site is required, by reviewing progress methods and conducting regular site inspections (RIBA, 2013).

3.1.7 Stage 6 – Handover and Close Out

A successful handover of a structure or facility, according to the project programme, is the project team's major objective during this stage. Further different activities can be implemented during this stage; organising feedback workshops and lessons learned sessions and undertaking different tasks in relation to testing the building and ensuring the successful operation of the facility (RIBA, 2013).

3.1.8 Stage 7 – In Use

The in use stage of the project deals with the assessment, evaluation and review activities of project performance and outcomes. It includes research and development aspects for future organisation and its projects' strategies (RIBA, 2013).

4. Appendix D

Strategy Approaches – The Design and Learning Schools

Appendix – D

4.1 Strategy Approaches

4.1.1 The Design School

The design school is a prescriptive school category, which Mintzberg *et al.* (2009: 5) defined as being “more concerned with how the strategies should be formulated than with how they necessarily do form.” According to Henry (2011), the design school proposes a model of strategy that is inspired by the analysis of an organisation’s strengths, weaknesses, opportunities and threats. Thus, an organisation needs to match its internal capabilities, strengths and weaknesses, with external possibilities, opportunities and threats. The former pair are driven by resources and competencies, whereas, the latter are related to an organisation’s competitive environment.

For the design school, an evaluation of strengths, weaknesses, opportunities and threats (SWOT analysis) in an organisation business environment is a key factor in order to match effectively an organisation’s internal and external environment. Following this, the organisation will have different strategic options; an evaluation of each of them will determine the best possible fit. The managerial competences of a firm are another important factor, as choosing the most appropriate strategy is the role of an organisation’s top management and other decision makers.

4.1.2 The Learning School

Other management researchers argue that the competitive environment is widely recognised as being volatile, complex and unpredictable (Henry, 2011 and Junnonen, 1998). Organisations in such an environment often experience unclear strategic direction. Accordingly, strategy making involves a process of interaction between the various management members, individuals and different groups who share interests in an organisation, in order to incorporate their experience and learning into an organisation’s plan of action. However, the learning school, in comparison with the design school, is descriptive as it attempts to understand how strategies are formulated in reality (Mintzberg *et al.*, 2009). In such a case, the management and decision makers of an organisation have to observe

closely the appropriate strategy for an organisation by implementing a process of learning and paying attention to trial and error; therefore, an organisation's business strategy emerges and develops over time.

Mintzberg and Waters (1985, cited in Henry, 2011) suggested three approaches of strategy making: intended, realised and emergent. Intended strategy refers to the processes that occur at organisation managerial level where negotiation and interaction between individuals and groups initially take place. As a result, the organisation deliberately chooses its strategy, while realised strategy is the actual strategy that an organisation has implemented in reality and it could be partly related to its intended strategy. However, due to new conditions in the industry market place or changes in industry competitive environment, the intended strategy becomes irrelevant and therefore is replaced by another one, the realised. Emergent strategy meets an external environment's needs. When managers, individuals and decision makers use their experience and learning obtained from the actual implemented strategy, unrealised strategy, over time they develop an emergent strategy that becomes after its effective implementation the realised strategy of a firm.

Indeed, the reasoning behind different strategic approaches offers an insight into what an organisation's vision is most likely to be and the appropriate strategy that is relevant to achieving that vision (Hitt *et al.*, 2007). Thus, after an organisation has its basic information or strategic inputs by choosing its environment and business philosophy, through scanning the internal and external environment, top managerial level and/or other key individuals or groups have to form a firm's value, vision and mission statements.

5. Appendix E

Project Strategy Components

Appendix – E

5.1 Project Strategy Components

5.1.1 Position – What?

The second part of the project strategy is associated with an organisation's position achieved following the completion of the project along with the expectations of company, stakeholders, customers and users.

Service/ Process/Product Definition

Service definition is associated with the end result which was not clarified at the project initiation stage. It defines the operation concept and how the project will be used by users or customers; this includes main requirements, functions and technical specifications (Patanakul and Shenhar, 2012).

Competitive Advantage/Value

Competitive advantage is related to what is unique about the service, process or product and how functionality, performance and quality are displayed. This element also concerns long-term value that will be created for the organisation (Patanakul and Shenhar, 2012).

Success and Failure Criteria

This element establishes expectations that will assess a project's success or failure. Success dimensions will make project managers and their teams aware of difficulties and risks that might be associated with the achievement of expected results (Patanakul and Shenhar, 2012).

5.1.2 Guidelines – How?

Guideline is the final major component of project strategy. It is the planning of various project actions in order to achieve business results. People's behaviours, responsibilities and relationships needed to reach desired goals are also considered. Also included is the project team's learning cycle during and after the experience.

Project Definition

This is a crucial element for good project management practice, defining how project objectives and value will be reached; this includes a project's scope statement, timeframe and budget. Another important dimension of this component is defining project structure, in

terms of which the project manager and team will perform the project (Patanakul and Shenhar, 2012).

Strategic Focus

The last component of the project strategy creates behaviour guidelines for project participants to achieve agreed competitive advantage and value. It is basically a translation of the project competitive advantage and value into a form of guidelines for behaviour. A project team's policy that drives their activities is also clarified along with learning processes including feedback and strategy revision throughout project life-cycle. Project managers should define the roles and responsibilities of all individuals of different teams who will undertake the project (Patanakul and Shenhar, 2012).

5.1.3 Perspective – Why?

Project perspective represents the reasoning behind a project and defines the overall project objectives and concept which will guide decision makers and other project participants throughout the experience.

Business Background

This element defines the reasoning and motivation behind the project. It explains the project environment, its needs and business opportunities, which helps project participants understand a project's big-picture and its association with their organisation. Problems and obstacles are also identified along with possible ways to deal with them (Patanakul and Shenhar, 2012).

Business Objective

Following the definition of a project big-picture, business objective helps a project's teams to focus on ultimate project goals, instead of just accomplish the project. This includes business results after delivering the project (Patanakul and Shenhar, 2012).

Strategic Concept

This component describes how a project's strategy idea is aligned with an organisation's strategy. A project's approach and guidelines for achieving the business objectives will, specifically, be clarified for a project's teams. It is the principal strategic guide for project managers and teams during the creation and development of a project's service or product, to succeed in the project environment (Patanakul and Shenhar, 2012).

6. Appendix F

Characteristics of Strategic Human Resource Management

Appendix – F

6.1 Characteristics of SHRM

6.1.1 Recognition of the Outside Environment

Strategic decision-making process plays an important role, and in which opportunities and threats from the organisation's external environment must be recognised. Several factors are included for greater results, such as legislation, political forces, social aspects, technology, economic conditions and demographic and labour-market changes. By considering these elements, an organisation can effectively assign the right people to the most suitable place, develop them in its best interests and retain them, as over time these individuals will take the organisation forward (Loosemore *et al.*, 2003).

6.1.2 Recognition of Competition and Labour-market Dynamics

An organisation needs to remain competitive in its industry. Therefore, recognising its competitive and employee-market dynamics will allow the firm to define and provide the necessary conditions for achieving this. An organisation's awareness of wage, benefits and rewards levels will also be affected, as well as other important working conditions (Loosemore *et al.*, 2003).

6.1.3 Long-range Focus

This depends on an organisation's management philosophy, in terms of where it wants to position itself in the future. Long-term objectives and direction of the firm should be considered by the company owner and key people operate in corporate strategic level. Shareholders might be also involved in this process (Loosemore *et al.*, 2003).

6.1.4 Decision-making Focus

This means that the particular direction and obligation of human resources should be consciously defined and clarified by the organisation. An effective implementation of this principle occurs when decision-making procedure is based on three levels, namely, strategic, managerial and operational (Loosemore *et al.*, 2003).

6.1.5 Consideration of all Stakeholders

Communication and negotiation processes with all internal and external stakeholders are crucial tasks. An organisation should take account of their views, interests and requirements in order to satisfy its integrated approach (Loosemore *et al.*, 2003).

6.1.6 Integration with Corporate Strategy

This characteristic is considered as the most important element within SHRM context. HR strategies must be integrated and aligned with an organisation's overall corporate strategy. At all time, HR should combine its competences and provide necessary skills and abilities to support an organisation's strategic goals. Indeed, aligning HR strategy with the corporate goals of an organisation needs to be done at both the strategic and practical level (Loosemore *et al.*, 2003).

7. Appendix G

Research Participants' Pre-interview and Consent Form

Appendix – G

Research Participant Pre-interview Form

Name of researcher: Nasser Alnasseri

Research project title: A Strategic Management Framework for Operators to Enhance Organizational Performance: A Case Study of Project Management Strategy and Human-Related Practice in Airport Construction.

Name of supervisors: Dr. Allan Osborne, Mr. Glenn Steel and Prof. Dave Greenwood.

University: Northumbria University, Engineering and Environment. Newcastle, UK

I would like to thank you first for accepting to participate in my research project. I am planning to talk to you about your experiences participating in managing airport construction projects. The focus of the interview will be upon management and controlling practices dealing with project strategy and the engagement of people/stakeholders with the project environment. This is in order to explore the relationship that exists between project management strategy and effectiveness. Questions will be based on a semi structure format and targeting two projects of your choice, being the most successful and unsuccessful experiences from your viewpoint. Accordingly, could you please pick them before the interview, which should take up to 90 minutes. With your approval, I will be taping the session and taking some notes. All responses will be kept confidential, meaning that your interview responses will only be shared with my project supervision team and I will ensure that any information I include in my research does not identify you as the respondent.

If there is any question before conducting the interview, please contact me on:

• Email: nasser.alnasseri@northumbria.ac.uk • Mobile: 0044 751 4275 651

Name of Participant: _____

Organization: _____ **Job title:** _____

Working experience within the construction sector:

0-3 years ☐ 4-7 years ☐ 8-10 years ☐ 11-20 years ☐ >20 years ☐

How long have you spent working in airport construction?

0-3 years ☐ 4-7 years ☐ 8-10 years ☐ 11-20 years ☐ >20 years ☐

How long have you been in your current role?

0-3 years ☐ 4-7 years ☐ 8-10 years ☐ 11-20 years ☐ >20 years ☐

How many airport construction projects have you managed?

1-5 projects ☐ 6-10 projects ☐ 11-15 projects ☐ 16> projects ☐

Signature of researcher

Date

Signature of Participant

Date

8. Appendix H

Participants' Interview Cards

Appendix – H

8.1 Card 1

Theme 1 - *Project Team Formulation:*

Construction business has been widely acknowledged by its fragmented approach. Project delivery teams and other project stakeholders are working within an environment where adversarial cultures and attitudes exist. Success is often measured in terms of the achievement of individual organizational standards rather than project outcomes.

I would like first to talk about the process of forming your project team and its associated practices, so can you tell me about it?

8.2 Card 2

Theme 2 – *Project Team Strategy:*

Each project within the construction industry needs different people in accordance with their professionalism, knowledge and experience and requires them to work and coordinate with each other. Collaborative spirit and various key elements among team members are essential to work with each other efficiently and in harmony to achieve project goals.

Can you describe the strategy you adopted to ensure that the project team performed effectively while working together?

8.3 Card 3

Theme 3 – Stakeholders Engagement :

Can we move now to employees (project staff) and other stakeholders' engagement/interaction. Construction projects often involve many stakeholders, in particular airport projects. The potential of conflict between each other is relatively higher.

What were the stakeholder management practices/principles implemented/adopted to cope with that?

8.4 Card 4

Theme 4 – Leadership Structure:

The relationship between team performance and leadership can affect the evolution of the team. Expertise, skills and understanding of individuals shape the structure of leadership. Leadership structure in an airport project environment associated with high level of segmentation where a single project comprises of various sub-projects.

How have leadership and leadership practices developed over the project lifecycle?

8.5 Card 5

Theme 5 – Project Culture / Behaviours & Relationships:

Developing individuals' assumptions, values and beliefs that are shared by project members, maintaining a certain type of individuals' behaviour and outline their focus and direction depend on several aspects of project culture.

What were the project values/principles that formed the environment of success?

8.6 Card 6

Theme 6 – Communication:

stakeholders within construction projects create and share information between each other throughout project lifecycle, whether on the demand or supply side. Many problems in construction projects have referred to miscommunication. Being a project manager of a project that involves many stakeholders dealing with massive communication instruments (contract, specifications, reports, manuals schedules, drawings, computer files, print-outs, agenda's and minutes of meetings) requires proper communication strategies.

How have communication processes influenced or not influenced the environment of your successful construction project experience?

8.7 Card 7

Theme 7 – Stakeholders Development Strategy:

Human capital plays a significant role in order to have a successful organization. People training and people development practices represent a significant strategy in achieving this. Within a construction project level, modifying or developing peoples' work-related knowledge (project agreement, health and safety roles, processes, and new project regulations), attitudes, skills, abilities and motivations can attain high level of effective performance.

Can you describe people the development strategies you implemented in the successful construction project experience in order to ensure effective working practice?

8.8 Card 8

Can you describe the main reason/s behind your unsuccessful project experience that are related to either project or human-related strategic practices?

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8.9 Card 9

How did you evaluate the term 'success' or 'failure' in your chosen project experiences?

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8.10 Card 10

Is there any other project or human-related Strategic Management factor has contributed to provide an effective working practice within your successful project experience?

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9. Appendix I

Researcher's Interview Guide

Appendix – I

9.1 Theme 1 – Project Team Formulation

Theme 1 - **Project Team Formulation** (Integrated Single Team):

- **Project Team Design.**
 - Cross functionally: members drawn from across all necessary departments/stakeholders or groups (Design team/owner representative/builder team)?
 - Aware of/share team roles and responsibilities / each other?
- **Project Goals.**
 - Mutual project goals and objectives “win-win attitude”?
 - Goals foster cooperation?
 - Clear beneficial consequences for all parties (organization/stakeholders)?
- **Project Support.**
 - Management support to provide the necessary resources/authority/power to project? From senior or other level.
 - Responsibility for project success and crisis: Shared or distributed?
 - Necessary authority and support for project team decisions?
- **Problem solving - Issue negotiation & resolution.**
 - Brainstorming sessions: to determine where problems were most likely to happen?
 - Team assistance: In case of project difficulties, members aware where to ask?
- **Project Team Efficiency.**
 - Team belief: confidence, produce high quality work and expected to be known as a high-performing team?

9.2 Theme 2 – Project Team Strategy

Theme 2 - **Project Team Strategy** (Team Work Strategy):

- **Project Objectives.**
 - Success factors: What need to be accomplished for success clear for all parties?
 - Schedule time frame, cost and budget estimated, delivering quality, safety?
- **Team Trust.**
 - Information flow: shared between team members?
 - Team ability & willingness: make input into decision-making process?
- **Team Cohesiveness.**
 - Own interest: achieved by cooperation or competition?
 - Solution focus: sense of belonging. “We”? “Win-win”?
 - Decisions based: consensus?
- **Team Interdependency.**
 - Nature of project activities: members coordinate activities with each other? Within team or different groups.
 - Team knowledge of required joint activities? Work together share ideas and resources, support and help one another.
- **Team Enthusiasm.**
 - Working approach: maintain positive approach “can do”?
 - Team role perception: owner of the project or staff?
 - Achievement recognition: recognize by individuals or project team?

9.3 Theme 3 – Stakeholders’ Engagement

Theme 3 - **Stakeholders Engagement** (Employees & Stakeholders):

- **Top-level Support.**
 - Stakeholders’ management: individuals responsible of overseeing stakeholders’ management activities.
 - Stakeholders’ development: assign personnel to develop stakeholders’ relevant skills.
- **Project Information.**
 - Updating information: on-site publication, newsletters and website? Email? Letters?
 - Stakeholders’ assessment: assessment of the status of stakeholders to ascertain the amount of shared information.
- **Stakeholders Meeting.**
 - Workshop arrangements: engage all stakeholders at the same time? Or part of them?
 - Regular meeting: ad hoc meeting arrangements for non-urgent/serious issues?
- **Concerns and Actions (Being proactive).**
 - Issues: encouraged to be raised in advance? At the time?
 - Actions: immediate discussions between all parties? Individuals?
- **Stakeholders’ Negotiation.**
 - Claims: variations to the predetermined scope – time extinction, additional expenses. Settling these claims by negotiation, confrontation or litigation?
- **Incentives.**
 - Individuals reward scheme.
 - Stakeholders’ incentives: available option when obstacles appear?

9.4 Theme 4 – Leadership Structure

Theme 4 - **Leadership Structure** (Shared leadership structure):

- **Leadership type.**
 - Formal leadership: focus on individuals' characteristics?
 - Team leadership: co-constructed in a team?
- **Empowerment degree.**
 - Empowerment: power authority and responsibilities are shared functions between all stakeholders or controlled by top-down leaders. Person with the most relevant skills and expertise can lead (consultant, contractor... etc)?

9.5 Theme 5 – Project Culture

Theme 5 - **Project Culture** (Behaviours & Relationships):

- **Relationship Values.**
 - Project success target/value: budget estimated/scheduled timeframe/safety/delivering quality and client expectation?
 - Commitment, trust and respect: how these built and developed in a project? (Integrated team? Shared goals? Problem solving approach? Win-win approach? History of making approach?)
 - Transparency: boundaries? Sharing information?
- **Habits/Behaviours/Attitudes.**
 - Comprehensive induction: for all new members joining the team?
 - Workshop sessions: updates/new agreements/new members/team? ...
 - Guidance: throughout project lifecycle (team approach/project principles)?
- **Proactive Safety Strategy.**
 - Psychological aspect: daily safety verbal communication? Supervisors – workers? Leaders?
 - Technical training: safety clothes? Equipments? Safety booklet?
 - Environmental and project policy: safety representative on site? Posters and signs on site?

9.6 Theme 6 – Internal and External Communication

Theme 6 - **Communication** (Internal & External):

- **Communication Strategies.**
 - Communication structure: lines of authority? Coordination between parties involved? Communication system? Staff members of main and sub projects.
 - Project communication: Internal (at various levels of the organization) and external (individuals and groups who are not members of the project) communication?
- **Communication Flow and Instruments.**
 - Information flow system: Are there levels of communication? Downwards? Upwards? Horizontally? Laterally?
 - Communication instruments: contract, estimation, specifications, reports, manuals schedules, drawings, computer files, printouts, agenda's and minutes of meetings.
- **Communication Documents.**
 - Document management: storage and retrieval?
 - Documents structure: style of project documents?

9.7 Theme 7 – Stakeholders’ Development Strategy

Theme 7 - **Stakeholders Development Strategy** (Employees & Stakeholders):

- **Development Level.**
 - Project team: at all levels within project team? Managers, professionals and project teams?
 - All stakeholders: provide sessions for other stakeholders (suppliers, contractors, sub-contractors, self- employed)? Temporary and permanent project team?
- **Training Method.**
 - On-the-job training: related to a specific project - getting the job done focus (Best practices).
 - Off-the-job training: learning basic facts and skills - lectures, films, exercises and presentations? (Knowing).
- **Motivation.**
 - Level of individual’s participation: employees feel their input is important in making the company successful? Just project team or all stakeholders?
 - Recognition: individuals or team? Awards or financial recognitions?

10. Appendix J

Interviews Data Description and Interpretation: Theme A

Appendix – J

10.1 Theme A: Project Team Formulation - Data Description

Context			
Organization 1: Private Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P1</i>	<i>Senior construction project manager – programme manager</i>	<i>Refurbishment of Terminal Departure Lounge</i>	<i>01:28:46</i>
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“it is always within my team and also within my organizational or main contractor ... I do not see that I can be successful if they are not successful and vice versa ... Our process is typically is that we have a project that is raise if I either assign it to a project manager or I can seek a project manager ... We are structured we have support from what we call a Multi Service Providers (MSPs), they provide a variety of functions, schedule management, cost management and contract management ... We set up a team ... Forming a team is very standard in a way we just bring the people together, explaining the overall outcomes and objectives.”</p> <p>“We tendered the work ... We had several responses and then narrow it down ... we made out decisions on number of facts ... The strength of the team ... The contractor team may have my project manager and myself and others within the organization, effectively it is a virtual team and then there is number of various stakeholders ... Until become a virtual team members as well ... Key representatives in certain areas.”</p> <p>“The organizational structure, the ability of the team, the experience and the competency of their core team, project managers, contract managers, QAQCs, construction managers, etc., various functions ... support we get from the back office, functions and the environmental management, contracting support, industrial relations, everything else.”</p>			
Sub-theme: Project Goals (PG)			
<p>“Reasonably closely, I mean they organize themselves and work obviously within their groups, I am the client, I have a project manager who was assign with that ... My rule is senior project manager, so I have a number of projects and each lead by a project manager, that is more a programme management level in terms of overseeing them, obviously I am also responsible for that project ... I have a number of projects, each with a project manager and I am managing the projects.</p> <p>“all member aware of responsibilities and roles of other members.”</p> <p>“We are trying to operate sort of collaboratively ... We have a number of structured reviews, in terms of weekly change management reviews, risk management, schedule management, cost on monthly basis ... And number of team forms within that group of the client to the contractor, and within that obviously of forming the team and working together ... As a group we have regular stakeholders management reviews weekly, key stakeholders to present the work that we are doing and various monthly forms ... It is all about that stakeholders’ management because it makes the success of the job.”</p>			
Sub-theme: Project Support (PS)			
<p>“We got support in the long game throughout the project, I have to report out monthly to (..) the airport executive ... Monthly programme review.”</p> <p>“it was the refurbishment of (..) An airport terminal departure lounge ... This part was about 18 months, and the core on site delivery was about 12 months.”</p> <p>“Monthly project board meeting with the project sponsor and other key management within the organization ... Another monthly programme review with directors’ level review, where I</p>			

present where we are with the project dash board.” “I was responsible for that project ... within the project”			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
“Actually this (problem solving process) happened in this project and other projects as well.”			
Sub-theme: Project Team Efficiency (PTE)			
<p>“In terms of moral etc. which is sort of soft skills and motivating people, this is work ... But we are very control driven (..) the airport, so we have a monthly projects reporting structure, a dashboard ... We use the value management rigorously, the contractor has to prepare all the monthly reporting data/control data ... We review the progress on site with the contractors ... They review their suppliers, so they make a judgment exactly what have been spent and being earned in terms of our overall programme base line versus what we actually spending.</p> <p>By using value management, it determine them what our schedule performance index and cost performance index is, what the cost variance and schedule variance is ... So we will be able to understand if we are spending more money than we expected at this point some time ... It allows us to make assessment on our progress, so fundamentally it is all about that monthly rigor of reviewing projects, so it is project programme controls and that also in the organization, at the programme level and then as organizational level in reviews shareholder ... All their data be grouped together within the overall programme, and that then give the confidence for the programme being on schedule.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P2	Senior Construction Project Manager - Portfolio Manager of Asset Replacement & Commercial Capital	Minor Construction Works Programme: Office Buildings, Roads Networks – Escalators	00:52:45
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“It was probably about reforming the teams to make sure we have got the right mix ... Small construction works around the airport ... Team of individuals ... We are mix of people ... history report performance ... what the key strengths related to those individuals.”</p> <p>“Bringing those guys together was absolutely essential through making sure they all understood where we are going as a team ... All have different ideas of what a success look like, so we have to get some clarity around what that meant to them ... Sharing what their various skills were, allowing them to demonstrate their skills in those areas and lead the team.”</p> <p>“The majority were in-house ... One or two contractor agencies but they were both tend to do effectively (..) the airport works ... There was a constant term of contractors bedding for pieces of works ...</p>			
Sub-theme: Project Goals (PG)			
<p>“We have an established relationship with them ... We are dealing with the same people time and time again.”</p> <p>“Across the team yes I did ... The idea was cooperation when you are looking reorganizing your team.”</p>			
Sub-theme: Project Support (PS)			
<p>“I have always support when needed ... I was giving a free hand to do what I needed to do, and so I have giving a very clear business objectives, what needed to be done ... I had all the power I needed to delegating team.”</p> <p>“For forming the team yes that was on me ... The individuals’ project managers had their accountabilities and responsibilities, so they have the power to run their projects.”</p>			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
“Actually not, as we were in crisis mode when I joined the team ... It was a two years			

programme, it was six months in and we were less than 10% away from the project”			
Sub-theme: Project Team Efficiency (PTE)			
“Being available ... They can talk to you and share their challenges and concerns with you ... You need to be supportive both in the professional and the personal level ... Come and talk to me”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P3	Senior Project Manager in Direct Support of Strategic Initiative – Pre-construction Activities	Strategic Construction Projects Perspective	01:25:56
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
“Unless let us say a major project ... We do not necessarily have process of formally establishing project team ... What we tend to have is a scenario ... We have what is called MSP (Manage Service Provider) ... build asset consultancy ... There are a big team of people and they are managing a number of multiple projects across multimillion programs ... In some cases and I will have individuals who are assigned to my project but they are not dedicated to my project ... If I need anyone else to support the project ... I call on people who already have their dedicated day jobs ... It is more of a virtual team ... I do not have a line diagram that says here is my project team ... Range of people who are allocated to support me in delivering the project but they are a virtual team ... It is around my ability to influence them to get the project delivered.”			
Sub-theme: Project Goals (PG)			
<p>“Everybody in the same building more or less ... Everybody on airport and then usually we would run the project through series of formal project meetings ... Weekly meeting or a weekly workshop ... I might meet the programme controls or programme controls side of the house to talk about schedule performance, cost performance, contract performance and do the day to day controls and reporting</p> <p>of the project ... I might have a separate session where dealing with IT manager, the property manager ... Whoever else is big part of that project in terms of the scope, the solution and the planning and what is need to be delivered.”</p> <p>“Yes, and you have to tell them too ... The MSP side of things quite well prescribed so the cost manager knows that is his job, we are hiring them ... They are quite clear about what they require to do to support the project ... In terms of briefing them it would be more around my explaining to them what the nature of the particular project ... They are working on a number of projects ... Making sure that they understand what this one is about ... But they are quite clear about their rules and accountabilities with other members of the project team who are more aligned with helping me develop and deliver the scope ... We are the client resources, people that belong to the airport ... I would have to explain why they are needed to be part of the project team ... What their actions or outputs.”</p> <p>“At the beginning at the point when you are making sure that the business case and its right strategy is there, then that whole piece around being clear around the value to the business of the project is stated ... is more chained to how we manage stakeholders ... There is usually quite a bit of compromise and it is very difficult to do something positive for somebody without impacting others, because you are working in a very constrained environment.”</p> <p>“But the MSP side of thing ... They are framework contractors we pay them to lever service ... It is important to make them feel part of the project. So, by making sure that they understand what they are working on.”</p>			
Sub-theme: Project Support (PS)			
“We do not carry a lot of power as a regulated business ... I do not know whether that because we are regulated or this is just the way that (..) the airport is organized ... There is very little authority to go with it ... Most of the accountability and the authority sets up at the board level			

... Day to day decisions, you have quite a lot of autonomy ... You are expected just to be proactive and self-starter to get on your job really ... But in terms of authority for decision making aligned with money no we refer that to the board.”

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“solving problem is entirely my accountability ... It depends on the situation, so we all set around the table talking about in a way that contractive and coming to resolution as great, if there is a need for decision and there is a time pressure then I would also be confident and after take a decision and say this is what we are going to do, so I think it works always.”

“I am accountable for making decisions ... If I have got the authority to take the decision then I will, if I need to refer up to then I go with the recommendation.”

Sub-theme: Project Team Efficiency (PTE)

“Making goals, objectives and responsibility clear is one part of it ... Reviewing as we go along of performance and where we are ... Making sure that people of thought through probably and how they are going to do the next piece of work and that it is well thought, well considered and well planned even contingency planning if this does not work or that does not work ... Encourage and influence as much as possible that we are all, as a project team, getting the most out of everything we do”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P4	Senior project Manager - The capacity Optimisation Programmes, Airfield Team	Airside Physical Facilities – Dealing with Snow in Winter Condition	01:19:40

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

“I have MSP (Management Service Providers) support ... They work in a number of different projects but they provide expertise in programme, cost management, risk management and contract management ... My approach is very much allowed them to be part of the decision making and not sort of developing a plan myself and tell them how it is going to be ... I tended to use a workshop format with them to develop solutions and actually that worked well ... They have developed the solutions themselves, so they buy on to it because they suggesting the solutions ... It is generating really good team ethos.”

“They are external service providers ... Have a range of experience working for the contractors, working on the client side, it is a good broad mix of people ... The project management team ... We as a team deliver the project ... There are still people on the project team ... They may not realize they are on the project team ... I need them to help us with issues, provide advices and help me clear obstacles ... I would very much consider them part of my team.”

“It is all about influencing and being able to explain particularly complex issues, being able to explain to them quite quickly ... I think there are quite a few people outside the immediate project team who I would consider still part of my team and helping me deliver the project.”

Sub-theme: Project Goals (PG)

“I have got my project and my project team who do the contract management, programme management and everything else and they work in my project but they are not the same team on other projects ... they work with different project programme managers and cost managers ... We have all got this project and then others and probably the same team is not on the same in other projects with different project managers. It is probably the same with external people in (...) the airport business who are in the wider project team ... Just helping people, trying to overcome issues and achieve results for the business.”

“Delivering the construction elements of the solution to helping the business deal with snow on winter conditions in much better way ... with more vehicles you need more drivers and if you got more drivers you need somewhere for them to shower and have the lockers and somewhere

to eat and rest and lax. If you got more vehicles you need more fuel, you need more of the deicing product to put on the vehicle ... Physical facilities for that vehicles.”			
Sub-theme: Project Support (PS)			
“I would definitely first relay on my influencing abilities and my network to be able to clear issues ... But I would maybe escalated to my line manager who has her own network at her level ... She is able to help me to clear obstacles if I am not able to unlock them at my level.”			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
“There is a lot of idea sharing, I do not think there is any parries in that respect ... We good here with the IT ... Everyone is very email friendly ... And idea sharing ... I think I have maybe not done enough in terms of explaining this is the input phase and you need to tell me everything in that phase, will agree and sign off that scope and then I will go and build it ... I do not think I have explained that well enough because I still getting input ... I should be explained the process to them and said look ‘this is the time line and we are in this first six months, tell me everything you want and if it within reasons I will included’ because if you can demonstrate you need it I will include it but after this point is not, I do not think I explained that well enough.”			
Sub-theme: Project Team Efficiency (PTE)			
“My approach is to try and create collaborative environment and trying to maintain that for our people even when you have very difficult issues ... In the long run it is much better to try and maintain a collaborative environment.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P5	Senior Project Manager – Fast Development Projects	Separate Temporary Terminal	01:13:47
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
“We had to build a separate temporary ... So we tendered several companies that did this sort of works and visited them to look at their product ... That was the first period really developing that design, getting all the input from all of the key stakeholders ... then getting the contractors on board and eventually we got on site.”			
“Mostly yes, we brought all stakeholders ... to try to figure out what needed to go in the building from my experience and also talking to other people that I know in the business who would have part of that operation on the day, like immigration, the security team, our retail team ... There were lots of stakeholders ... There were the airlines stakeholders, people from the authorities ... because we had to be sure they are happy with what we offering.”			
“A little bit of both really, I put together regular working groups with the IT, both groups with our IT and with the people who supply the airlines with IT, because we found out that checking product that we wanted to offer ... there were 3 main systems ... We had to get in to the building ... With those people we were very close and we worked very close with them and with their airlines’ IT reps to make sure they going to be able to meet time scale that we had ... That was the key issue, (...) the event was not going to change its date.”			
Sub-theme: Project Goals (PG)			
“Well we generally do that anyway ... The way we work is to trying to be collaborative, and yes you have the occasion where people have got competing, requirement some priorities but we usually apply that.”			
“Actually people wanted to be part of it ... People were very keen and wanted it to work and they knew it is important ... They knew that (...) the airport, if we did not do something like the (...) the event terminal for all the forecast data that we share, (...) the airport will be in trouble for those two or three days which would then not gone potentially and the bad media coverage we would have got out of it ... This was not an option really, so it had to work ... Everybody really got stuck in and got behind the project which was great.”			
Sub-theme: Project Support (PS)			

"I think I carried a lot of it ... There was another team I was reporting back too who had maybe overall control of the (..) the event effort, I think for the (..) the terminal itself a lot of it was setting in."

"It was my baby if you like ... Go and do this and come back to us if you need any support, so really I only pull that support when I really need it."

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"We did that ... When we were developing the scope ... A lot of the early discussions were, brought together the design team and brought together people from our operation and brought together some of the airlines' people to talk about what we needed in the building ... In the early days we had several sessions where we were talking quite openly, you know, about 'what if we do this' so a lot of different scenarios."

Sub-theme: Project Team Efficiency (PTE)

"I was very driven towards delivering it whatever date ... There was always very tight deadline and follow up on the actions ... Everybody recognize the thing, they had to get the finger out on that one, quite often on other projects people do not do the actions or they do not quite finish and tracks on other weeks, we could not afford that in this project ... So we keep the pressure on."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O1P6	Senior Construction project manager	Refurbish an Old Domestic Lounge	01:05:16

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

"Project time frame was 12 months ... We have got a number of people ... We have got a development department or number of internal resources ... Project management office who do the resource planning for the project as well ... We have got functional teams that provide support to us ... We have got our quality team who set the standard that we use to make sure that we deliver project and quality ... We have also HSE (Health Safety Environment) team who are specialist in the area ... We have also got a design team as well, so a number people and we call them design leaders to make sure that our standards/design standards are met ... We got people that we do not need to buy, they already here ... We do buy resources called Managing Service Providers (MCPs), they support us to make sure of different points of views, commercially with delivering best value, schedule so around schedule management as well ... We have got an acquisition team as well ... Mix of external resources from managing service providers and also internal team ... We have also got framework contractors and framework consultants."

"A five year framework agreement in place with design team ... We have got architectural practices ... The contractors we have got a framework on place for complex building integrator ... They do our large project ... We have got local LPI (Local Project Integrator) suppliers ... We leave a single source of suppliers or we go out to tender to make sure that we you know introduce competition."

"The project was a refurbish of an old domestic lounge at (..) the airport ... What made that successful is the way that we worked quite hard and I did find the strength of the team, areas for development to what we did when we started to draw in the resources we got our design, contractor, our commercial teams together we have spent a day, an A1 day ... Getting everyone together and what we did, the day was around on mixing those team ... The project manager would be the contractor, the contractor would be the project manager in roles ... I put them those roles for a day and everyone worked together and we also undertook Belbin for individuals for we have got an idea of where the strength were for different members of the team ... Just started to develop a bit of team working very early ... What that allowed us to do moving forward was open an honest conversation with each other rather than this very

contractual relationship ... We had issues on the project but was able to debated open and honestly and actually it was viewed when I first take over as a poorly performing project to one of the best project delivered at that time.”

Sub-theme: Project Goals (PG)

“It was actually yes ... Let say the contractor wanted to make a profit out of it ... Stakeholders wanted extra capacity ... It was win-win for everyone ... By doing that we tried to be a project team.”

Sub-theme: Project Support (PS)

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“This is the storming period ... This is what we do ... We actually started problem solving and was able to get together and discussing all together ... We had an open plan office and what I did on there, it not just we got the stakeholders and the airlines together.”

Sub-theme: Project Team Efficiency (PTE)

“Very open and honest ... You have to set expectation ... You have to be very approachable ... You have to be very supportive as well in the team ... Trying to handle soft skills rather that task skills ... You have to do the task skills but while you go doing it I think.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P7	Senior Project Manager – Capital Construction projects	Airside Segregation Project	01:05:57

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

“Segregation project ... Was successful because I chose the managing contractor ... Then helped me pick the appropriate sub-suppliers ... Actually, they were our contractors and those contractors were from this framework contractors who we knew could perform in the airport environment ... It was all airside ... There were lots of stakeholders involved because it involve putting a segregation right a cross of (..) Airport terminal ... A lot of areas underneath ... The baggage area ... The departure lounge ... The customer area ... We could upset a lot of people, but we knew the needed resources that were certain types of resources ... We had the basic group design ... I think is very different from a lot of the projects ... I think is very different from a lot of the projects ... The head of that commercial team was from (..) the organization employee ... He was given very strong accountability by me ... We ended up on that project under budget and under time, so that was a successful one ... The accountability was spread among the team ... There were very clear rules and responsibilities in terms of who had accountability for doing what ... The managing contractor ... All the other contractors had very clear accountability ... Was very well laid out in terms of those rules and responsibilities ... Very well as we went to a lot of details with the design in terms of how various parts of the construction fitted together.”

“Rules and responsibilities had clarified well to every party.”

Sub-theme: Project Goals (PG)

“The project successful was one the fact that we had a number of very common goals ... We had to do this in a certain time ... To make best use of the pre-fabricated units ... Wanted to introduce the learning ... Develop the learning ... To have success from that ... Some of the sub-suppliers had buy in to making that successful.”

“We all were working together as a single team.”

“You would get the representative of different team together, I mean the main contractor ... This was once a week.”

Sub-theme: Project Support (PS)

<i>Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)</i>			
<p>“Yes we had design and we had the managing contractor on board ... That was valuable ... What I like to have as soon as possible on the project is what I call a production plan ... Basic outline of a narration of the programme or the schedule ... We going to build things in a certain way and a certain process ... Specially if you are do it with diagram then you start to understand the issues that you have to answer.”</p>			
<i>Sub-theme: Project Team Efficiency (PTE)</i>			
<p>“I set very tough targets ... I got the whole team into a room and said we have to make this date ... in my mind I knew it was possible and we just drove towards that ... Ultimately, you need to be quite flexible on how you ultimately settle and deal the changes with them.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P8	Senior Construction Project manager – Leader of project Managers & Project Engineers within Airport Runways Projects	Airfield Pavement Projects (Runway and Taxiway Refurbishments and Prefiguration)	01:16:36
Intension			
<i>Theme A: Project Team Formulation (PTF)</i>			
<i>Sub-theme: Project Team Design (PTD)</i>			
<p>“The team that I came into were fully parting with the contractor ... Fully inclusive sharing all risks, design process and everything ... It was a fully integrated team ... It was not a more adversarial approach which perhaps is all what we have got today ... That was a quite good environment ... We involved in the design process ... Involved in costing it, discussion cost works with stakeholders ... There is a project managers from the airport side we sort of helped move that process on ... A lot of it was left to the contractor to sort out with other airport stakeholders ... That was a quite good team ... A good way of structuring because everyone was jointly working towards a goal, you do not hang up about with you making money or not it is not the commercial side of it.”</p> <p>“It was series of projects ... Airfield pavement team ... The run way refurbishments, taxiways, and some prefiguration ... It was a pretty unique team within (..) the airport, because of the environment that we were work on it ... It is a very specialist environment ... The work is very specialist ... It is quite difficult environment to work in with all stakeholders and the requirements of the regulations and the certifications of the airfield.”</p> <p>“It was about ten years framework ... We realized we have to work in a different way ... In a way that was structured and also working in this pavement team structure.”</p> <p>“We were hundred, no not hundred, we have so many stakeholders ... We have many stakeholders, people of the service, people in technical issues, people that deal with the services ... If you do not go to all of them and then miss one out, that one can still stop your project ... We have got the project team ... There is the client, the contractor and maybe we have got the cost management team from a third party ... But all the stakeholders do their normal day job cross the airport ... We then have to do is pull them in to our team every night and then just to discuss with them how we interface with the far service ... We have to engage the far service ... So they are happy ... You just got to pull them in every night ... But they are very focus on their normal day job, so they are not looking to then not aiming to understand what we do as a team or what are our responsibilities are.”</p>			
<i>Sub-theme: Project Goals (PG)</i>			
<p>“In that environment it needed to be win-win ... Because the contractor got paid all these costs plus the fee and he was not competing with anybody else ... Even to the supply chain ... Everybody were seeking the main driver ... Was to deliver a good successful project rather than making more profit than somebody else.”</p>			

“Everybody worked out at the same office ... I mean just because I am a client did not mean I had any more authority than anybody else ... Even that the hierarchy ... Everybody was working at the same level and everybody had the same goals.”

“Because of the airfield you have to talk to other people that work in the terminal ... If you go back to (...) an airport terminal project when that was built ... Was built in very much the same model ... Everybody was working towards a goal of completing the project rather than the need of their individual companies ... It had the same ethos.”

Sub-theme: Project Support (PS)

“Yes we still set roles ... At the end of the day we are paying for it ... We decide what we going to build ... How we are going to build and when ... It is in our control ... It has to be like this because contractors are building what we ask them to build ... The sequence things and discussing with the stakeholders over getting access to various things.”

“There are not worried about whether they going to make money or not, the main driver was to get over whatever the problem was as efficient as possible ... The benefit for them was to get a good reputation and make sure they got more work for the future and to be able to sell those skills outside the airport.”

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“We got a particular problem then can get together, discuss and brainstorming what we can do and come out with the best solution ... We have regular risk management sessions ... We will review where we are, what the risks are ... At the beginning of the project we begin do brainstorming bits, what are the risks, how we can mitigate them, who is responsible for the risk and then as the project evolved we probably review that each month, so keeping up with managing the risk.”

“we have stakeholder assessment strategy ... Project manager be responsible for making sure we driven on.”

Sub-theme: Project Team Efficiency (PTE)

“Clearly set out what their responsibilities are ... Leading all the project managers and allowing them to get on with do what they need to do ... Supporting them on that rather doing it for them ... Trying to sort of encourage them ... If they find any problem come talk to me about that ... If there is any problem I help them with them.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P9	Senior Construction Project Manager – (leader of Project Managers (Security and Saving Operational Cost)	Terminals Security Project: Security Equipment in the Passenger Security Areas	01:43:20

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

“It’s a security-based project ... All around installing new security equipment in the passenger security area in all Terminals ... To increase the flow of passenger through security ... To introduce savings on operational expending shares because the lines that more efficient they require less staff to manage lines.”

“Keys to get the right team ... Around experience I would say ... Team I got in my current project they have experience in this particular type of projects ... The airport is a unique environment ... Maybe at an airport more than some other environment, it’s important that you get people they have got a specific experience ... The right people who have the right previous experience and based on that previous experience it will give you the confidence that they going to deliver what you need them to deliver in your current project.”

“Team I have got ... it’s a mixture of internal and external ... (...) the airport employees support services ... Cost managers, schedulers, and risk managers ... The external teams are largely

based or comprise of the large CPI (the Complex Building Integrated) ... The construction company that you choose needs to have the relevant experience ... At (..) the airport we have complex supply chain of different construction companies, each with their own specialties and each at varying time perforating well or not performing so well ... A lot of it was based on me having worked with them in the past, me knowing the personnel in that company, being confident that they can deliver, past record on similar types of projects and I think that sorts of the early project forming those criteria that you use ... If they got the right experience from the previous projects and you got confidence that they can deliver this time around, it's essential to get in the project right from the work go."

"It's more of a virtual team I guess ... I am based here (head office) generally ... The cost, risk and schedulers are either based here ... They might not work directly for (..) the airport but they manage service providers that we use ... They provide us that service ... In affect they are working with us ... It is four to five years contract for supplying those services ... My current construction company based on site, they have project office port cabin ... They work out from there and all the projects that they do in (..) the airport generally are managed from that one office including mine ... We work together but we not necessarily all in the same location at ones ... On a weekly bases if not more frequently I have meetings with the construction guys ... With the risk, cost and scheduling teams as well ... The contact is daily on the phone, if not hourly, depending on how the project goes."

"The teams or different groups that come out from me being in the centre, they know what I expect of them ... Managing Service Providers (MSP) team who do the scheduling, the cost and the risk don't necessarily meet up with (..) the contractor on a weekly bases, it comes through me ... If they do need to meet then it would generally been meeting facilitated than meeting each other ... They don't speak to each other directly on a daily bases ... It's a joined up team but comes through the project managers and that applied to most projects at (..) the airport."

Sub-theme: Project Goals (PG)

"Project goals and objectives are set out right at the beginning in the brief in the business case ... Again it's a unique environment ... We have got so many projects on (..) the airport ... Quit often the project managers who is delivering at any one point is not necessarily the project manager who started off the project ... I might not have written the business case but I am now delivering it."

"I keep coming back to the word unique ... (..) The airport is unique ... It is a regulated construction activities ... We are regulated in our case by the CIA ... Any work that we do in (..) the airport, generally, is funded by the airlines, but over five years period ... We charge airlines to land at (..) the airport that is how we get the money to do our projects ... Any work that we going to do in a five years period has to be agreed in advanced ... So we can predict how much money we going to get to pay for that project or that portfolio ... The business case is for all projects ... Presented to the airlines and to CIA and to the governing bodies of the airport in advance of the beginning of that five years period ... The business case is quite often written very early on, even though the delivery might not happen until later on."

"In general yes it is cooperative environment ... Each party has got slightly different priorities ... The CIA are coming from how much we can charge point of view ... The airlines are coming along almost with we want you to do as much as possible, build as much as possible, make terminals as good as possible ... We sort of the man in the middle ... We can only use this much scope, therefore our list is only this long ... Each is got their own priority ... In general it is cooperative ... There are always going to be occasions where there is a disagreement over which project takes priority."

"We can solve with the airlines because the airlines we have to work in congestion with them to make (..) the airport work ... We can say to the airlines, we going to do that and you may not like it but we will do it anyway, because it is our airport ... We would not generally encourage that sort of behavior ... They will then not cooperate in the future ... We involve them because we want them to cooperate with us."

Sub-theme: Project Support (PS)

““They do have an input ... We suggest what we would like to do in that five years period and have a business case for each piece of work ... the airlines will also say “will we quite likely to do this” and they will input into the business case to get that done ... We will have our owns that we wanted to do and the airlines will have their ... All put into one part and then prioritize based on how much money we can generate from landing charges in the next five years period ... If the CIA who govern us are saying “you cannot charge that much for the next five years period for planes to land here” that reduces the amount of income we going to get in that five years period ... It reduces the number of projects that we can do in that five years period ... In the big list of priorities the less money we have the higher-up that priority list the line is drawn.”

“The planning and programme director is the main point of contact for the senior airlines management ... Different airlines they have senior management ... Then an overarching body called AOC (The Airlines Operator Comities) ... Main director will be representing (..) the airport and what we would like to do and the AOC and various key airlines will be representing the airlines ... then you got the CIA as well who effectively govern how much we can generate on five years period ... They all have numerous meetings.”

“It is start from these business cases ... When you deciding which project you going to do at this early stage, risk does not really come in to because you have not started building anything, you are just making a priority list ... Once the project start, the risk is either or generally split between (..) the airport and the construction company ... We are also including risk within our internal cost plan as well ... There is a sharing of the risk and it depends on what the risk or who is own it in effect.”

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“In a day to day environment ... You have a risk review and a change control section ... If anything has arisen in that past month ... project change control will take that money from risk and put it into your based cost.”

“Project managers, programme office, a lot of the support team that I would say (cost managers, risk managers) ... All that work is done in the background and then in this monthly session, you got the programme director, the project manager, the programme office and maybe somebody from the commercial team, present how much risk they want to drawdown that month and it is sound of you get process ... The contractor does not go ... Separately every fortnight I have a commercial meeting with the contractor and my commercial manager ... We go through our contract change system, it is done in a programme called SEMAR ... It is the way that project manager instructions are generated, compensation events are generated ... It could be from (..) the contractor saying that “not in our original cost, therefore we need money for it” ... It could be from our side, responding to that saying “this is not justified or yes we think this is justified” ... Those commercial meeting every two weeks are generally about validating the compensation events.”

“I am very blessed with the way is going, they are very corporative ... There are mutual respect between me and their senior project managers, in terms of what I expect from them and what they expect from me ... it is a good relationship.”

Sub-theme: Project Team Efficiency (PTE)

“Security project types in an airport has all sort of complications, regulations and rules you have to apply ... Companies that work at (..) the airport know it is a unique environment ... They know that it is going to be complications and on this specific project ... There are numerous roles that make the project difficult but they have to be abided by ... You either do what has to be done or you do not do the project ... In terms of cooperation, they understand that and I am realistic in what I expect from them in the way that they abide by the roles and vice versa.”

“On the airfield there is a completely different set of roles ... All about knowing, which roles, which procedures, which governance applied to each specific area of the airport ... It is every point at (..) the airport has its roles that you have to apply upon.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
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01P10	Senior Construction Project Manager – Programme Director of Terminals Projects	Totally New Terminal	02:24:06
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“A new Terminal 2 here at (..) the airport ... I took a lot of learning on that from (..) previous terminal project in the airport and this is about success factors ... We have moved over the past is been adversarial formal contract ... Then we have moved to T5 agreement which is alliancing ... We ask people and we can say who can do that over there and the charges and no hidden profits ... Then we are on the Intelligence Client Model which is really developing now ... Part of the project team ... I think it includes the contractor as well ... But there is another thing about all people around it and the consultants and everything else ... I use psychometric test about forming together the team ... I always make sure within my team I have got the psychometric ... What we look for is whether you are RED (Delivery director or whatever), BLUE (which is very sort of in spreadsheet, introverted, academic can go that as well), YELLOW (sunshine, come on let's delivered, let's motivate, let's go for it) and the GREEN ('I want to hockey' and that sort of things, out there talking to people) ... I make sure I have got a balance team in terms of skills set and also make sure in terms of the types of people ... I am only as good as my team, so I have put a lot of effort into forming the project team, and that is why that is successful.”</p> <p>“The job that it did not work well was a team which I have inherited and I have not got an influence on them ... Traditional way, it is just sort of people being on the right place at the right time, getting on the job and that sort of things ... The dynamic was not right ... I have got rid of the people who would like shouting out, they have moved out</p> <p>My hypothesis is that you do not get project managers ... Everybody talked about being beginning to end ... Some people like the development ... Some people like it at site, some people like at the close out ... I balance it ... Bringing more strength in the site team like (..) an individual like been out on site, like engaging and making sandwiches with the boys on sites and etc ... Then I have got those people who are blues which are very structured, spreadsheet and details ... I need people who are detailed now, about finishing, who stickles for quality.”</p> <p>“A contractor is only good, my hypothesis again is that a contractor, whatever you get, it is based on five good people ... When they give you a team you need to make sure you have got the strongest team ever ... When I joined I have removed the project director and replaced him with the (..) a project manager of the year of (..) a contractor company ... You are only as good as you team and you are only as good as your contractor ... Because they do all the cleaver stuff and I am just the client ... I do something based on psychometric ... I do something which is interviews and also interview the contractor as well and I get the people tidy and strong I get them tidy to the contract</p> <p>“I am a project director and I have something is called project control manager, I have something is called a contractor officer and I have a commercial manager ... The project control manager reports to project control director ... The contract officer manages the contract ... The commercial manager manages the contract/the acquisition side of things as well and he reports to the acquisition director and it keep me honest.”</p> <p>Project control manager, the MSP works for them. So, the service provider and maybe some cost advice goes in there, so project controls of the MSP goes in to him and the cost management, it managed by him, but goes to the commercial manager as well. So, all this data, cost and commercial, it is all working together. I have got a team there ... You have got a team who deliver on site set with me around me, my project managers, but also a team in here as well</p>			

... It is really an interesting model ... This level is the strategic level of the project and the other level is the project level ... The strategic is about direction."

"This is really important ... We have a day called insight ... This thing where we do the psychometric test of the team ... They got a list of how they communicate with me ... I am an energetic I am yellow ... I will talk over you ... I spend a whole day ... I got everybody to write down define rules ... As soon as write it down then read it ... I asked everybody on my team to put it in PowerPoint ... Put it in a PowerPoint slides all the things you do ... What I do and if things do not goes right what the consequences and something like that ... Everyone was really interested in that day, because it was a bit of an establish team that picked up ... The fact was 'hold on I am doing that, you have put out there but I do that', it was duplication ... Duplication is inefficiency, duplication is communication, and duplication is failure that is my view of the world ... Yes define rules ... Where we are now what is called Quintuennium (Q6), sorting a new regulating period ... We have moved along way and I am quite excited about where we are at the moment."

Sub-theme: Project Goals (PG)

Everything we do it got has a benefit ... Every pound I spend out there, we use to just be able to build stuff and get a returns on it ... Now it is about benefits ... Now it is all about shareholders' values ... And giving the airlines what they want ... We have 8 strategic goals in this organization ... Everything I do goes on to the strategic goals ... We are business cases now, so goals are separate from that ... So what we have is why we do something ... The goals side of things, I set the goals, I am a leader I set goals for my team, I set individual targets ... I have my straight line for every project ... I want this to be the best project ... So, goals are quite specific, goals are there for my team ... Just my team will know individual goals are ... Then there is something beyond that is also something at the development level which is all links to those 8."

"I think to some degree on the individual level ... It is part of that process, developing individuals that they have goals they have to achieve ... When I said best project to (...) the airport what is best mean, it means time, quality and safety, safety is number one."

Sub-theme: Project Support (PS)

"There are 2 things as a support; I think a leadership really understands how people tick ... I had a boss ... When he comes to the site people are fearful ... It is something I can use to my advantage, so I look at the strength of him ... I go listen my boss is coming tomorrow, we better make sure we have got the perfect slide ... I can be empathy with the contractor and work together, create that horrible things on site ... But also it is creating something which I can use ... So as long as we keep together and aligned, me and him, so this fiery, scary character coming to the site is part to me, so it works for me ... I have got a lot of respect from my boss, he has been great for me."

"There is a matrix I have for communication ... What you have is important stakeholders' effects on the programme ... You have got somebody pushes a baggage trolley (down in the matrix) and they are not important to the programme, so we giving them a newsletter every six months ... You got somebody (up in the matrix) a CEO of the company ... He is a high important up to the project and has got a high influence on the outcome of the project. So, I use to speak with him every single day, pick up the phone every day, but it could be a stage whereby dips in him to the middle area (of the matrix) and somebody else dips up ... This is got to be as a matrix where you look at all the time ... So that is how we communicate."

"When it is crisis ... This is very important and a very good question ... I believe you should have absolutely honestly in crisis ... As soon as I get incidence, anything that happen in safety you actually you tell, anything that goes wrong you tell, everything gets found out here ... We get all the data we can and we published it externally ... The reason for that is when you are honest no one can blame you ... There is a data and it is bad but we show how we improving it as well ... If I leave it goes even higher ... You got to be transparent on good and bad."

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"We have formality of that ... Weekly meeting, and leadership lessons ... I was around the table ... I picked up good practices over the years and I listen to people."

"I do not think so ... We are a multi headed changing organization ... We have got a matrix but it is not always work ... (..) the CEO wants 4 between him and lowest point in the organization, so there is him, (..) a director, me, senior managers and somebody else and that is set in the whole organization ... The reason for that is communication and then is also about accountability, ownership, decision making as well, empowerment and these sorts of things."

Sub-theme: Project Team Efficiency (PTE)

"There are some people who can and some who cannot ... People who cannot I make sure they do rules where they apply to their strengths ... I have got people who do not write very well but they love talking to people ... I have got them out on site looking at safety, taking of the airlines round all day long ... I have got other people who are tick box and such things ... It is just aligning people to their strengths ... Most of the times it works ... It is to understand who are the BLUES, who are the GREENS, who are very dissemble, they are out there in the field talking to people ... The YELLOWS and RED are leaders ... The BLUES keep a track of the cost and values ... If you put people in the wrong box, there are unhappy, if they are unhappy you do not get the result ... I do not have criteria for that but I feel it."

Context**Organization 2: Public Airport Operator**

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P1</i>	<i>Deputy Construction Project Director/Project Control Manager</i>	<i>Totally New Airport</i>	<i>01:35:30</i>

Intension***Theme A: Project Team Formulation (PTF)******Sub-theme: Project Team Design (PTD)******Sub-theme: Project Goals (PG)******Sub-theme: Project Support (PS)******Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)******Sub-theme: Project Team Efficiency (PTE)******Context***

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P2</i>	<i>Head of structural engineering department</i>	<i>Private Aviation Terminal Project</i>	<i>01:21:25</i>

Intension***Theme A: Project Team Formulation (PTF)******Sub-theme: Project Team Design (PTD)***

"The first criteria that they have to be qualified and should have the experience, they should be very positive approach to the project, which should not getting to problems relate to personal kind of situation ... Not even experience but also at the same time their attitude, how they get along with people, how they take care of other things of what been giving to them and how

quickly and fast they react upon their experience and qualification ... Because been working in a place so many years, we come in to a point when we have conversation, communication, discussions as well and dealing with those people, you can find out quickly ... You know how much in depth they are at showing."

"I have an A project which called Private Aviation ... I was working with engineering department of (..) the airport, and I have been giving this task to develop my own team, so I chose from my department and we were about 6 to 7 people from different disciplines."

"The project has given to the consultant who has designed the project and it has given to us to supervise the construction activities ... We handle it, and reviewed the design, we have reviewed it of all disciplines, electromechanical, structure ... We have coordination with the consultant services company that developing all criteria"

"Main stakeholders of the project (..) the public operator as a project manager, (..) the consultant and (..) the main contractor."

"Once we have a team and be in a team work, I prefer everyone to have freedom to do the job perfectly with no limitation, Contractor should comply with specification and at the same time we want to make sure that we follow the design that has been approved and that should be complied, without any excuse ... If there is any technical problem we solve it for them and we help them actually ... We review the design and give all the tips for construction activities to make sure that progress is going and we should not stop the work."

"My team, of course of different disciplines be always have a meeting and we discuss the problems and we come up with solutions, we have, meetings with the contractor at the same time and also with the consultant ... , however, we prefer to have him also on board so that we know what is all about and he should explain."

Sub-theme: Project Goals (PG)

"We developed it and from the day one of the design we had a very close coordination with the consultant and we told them this is our expectation, this is our criteria, this is our design criteria for all disciplines."

"We have had also other stakeholders e.g., government agencies, airlines, (..) the private aviation and Jet Aviation who are the two major stakeholders, we discuss with them the requirement to make sure that we comply their requirements ... They are going to be the end users, and you do not want to have something that given to them and then 'oh my god, what is this'."

Sub-theme: Project Support (PS)

"I was really lucky enough at that time to have that kind of support from the top management, even from the general director ... This is your baby, rise it up, bring it up and give it to us and we will take care of it'."

"I would not go beyond that kind of limitation that has been given to us technically, we can of make sure that project is perfect in all aspects from meeting all specifications and criteria, and of course all engineering standards."

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"We do not have clashes with the contractor ... We want to make sure the work should not be stopped ... We give them all technical help as much as we can ... And be having a good understanding with the contractor and other stakeholders like Jet Aviation, they do realize that this is a perfect team."

"This what I have developed, a communication ... I told everybody 'if you have any problem come to me', do not go somewhere else to get some kind of help ... Once we decided is beyond our limitations then we go for some other authority and then we share that problem with my top management and resolve it."

Sub-theme: Project Team Efficiency (PTE)

"it is open book actually, we always have communication everyday early in the morning and we discuss the problems and what we have to do, what we supposed to take care of it ... Understanding between us as well ... Giving the confidence, and giving the respect to each other ... I tell them 'if you see any problem, or you see I am going to a different direction, stop me

please, take care of it and do not hide it’.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P3	Senior Project Manager - Leader of Project Managers & Engineers (Civil, Structural & Pavement).	Runways Development of a New Airport - Airfield Projects	01:18:19
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“The project is redevelopment of runways of (..) the airport, airfield projects.”</p> <p>“The project team has been selected by the (..) president of the public operator ... The project was to develop the terminal including the runways. At the early stages of the project I was not in the project team ... We had a project to evaluate the status of (..) the airport runways with a (..) an international company ... I was a member of that team ... They recommended that runways must be repaired or redeveloped ... According to that I have been chosen to be part of (..) the new airport development team (terminals, towers, taxiways, runways and aprons).”</p> <p>“According to the study report we have developed the design within (..) the public operator, we had not have consultant at that time ... I am taking just regarding airfield projects. After that the project has fragmented into 2 projects ... The official body have asked us to provide all project related documents, scope of work, design drawings, project elements, pricing and so on ... It was an in-house team.”</p> <p>“One of the key factors that made the project successful ... I have involved in the early stages from the assessment and evaluation stage ... We had skilled and expert people in the team ... We developed the project scope, table of quantities and pricing list, we then handed it to ministry of finance and we got the approval.”</p> <p>“The external people are just in the landside area, terminal project, and all parties involved in the airfield projects, runways, are in-house, designs and project management.”</p> <p>“It was a general tendering, 7 or 8 companies have participated ... We did not pick the best offered price, instead we chose the best experience company with its offer too.”</p> <p>“The first draft of the design was developed in-house, later one of the contractor task is to select 3 designers where we picked one who going to complete the project.”</p> <p>“the in-house team were director or project manager ... Then several departments underneath him, civil engineering, electrical and electromechanical engineering, special system, contract and legal department and document control center.”</p> <p>“There were (..) a local airline company and most of the existing foreign airlines ... All in-house people, maintenance, operation, airport management and security and so on, they must be there ... Actually we have assigned someone from airport management to coordinate with us in this regards ... The contractor and designer and people within (..) the public operator people who are related to runway operation activities.”</p> <p>“It supposed to be 3 years, however it took 5 years ... This is because of some obstacles that appeared ... We supposed to start with the East runway and it is the nearest one to the air force, so they have asked for an alternative runway to precede their activities during completing our project.”</p>			
Sub-theme: Project Goals (PG)			
<p>“Actually we have developed almost everything before involving the contractor ... We made several changes after we started the project.”</p> <p>“We were almost working as a one team and we tried to make the best supervision from our side.”</p>			
Sub-theme: Project Support (PS)			

"We had a full support from our upper management ... Our team really got the confidence that we can accomplish the project successfully by effective supervision and follow up the project ... They were always there, as they know the value of this project ... You are talking about aircraft safety related, it is must be one of the first priorities for them."

"We were almost working as a one team and we tried to make the best supervision from our side."

"The project administration from (..) the public operator side ... We consulted (..) the contractor and considered his recommendations but we made the final decisions, especially in a critical things."

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"We had weakly meetings to discuss project obstacles and any problems ... We developed different alternatives for different scenarios ... The project phases were East, Central and West runways, but we did the East and West then the central runway ... This was one of the major changes in the project."

"I was coordinating those sort of things ... I have assigned ... to be at the top of the structure as a project coordinator ... I received all communications, tasks and documents and then I distribute them to relevant department/individual ... The contractor also has a coordinator who I deal with in all project related."

Sub-theme: Project Team Efficiency (PTE)

"I have developed a good system within our team in a form of check list following every unit or sub-project handover ... In airport projects you need to be ready and aware of all standards and requirements ... We have adopted the ICAO (International Civil Aviation Organization) runway checklist and implemented within our supervision and management practices."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P4	General Director of Engineering Affairs - Domestic Airports	Airfield Development Project – Domestic Airport	01:14:21

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

"My A1 project is (..) a domestic airport ... I had a project team from all different disciplines, project consultant was his first experience in airport project ... The contractor was the first contractor have work with (..) the public operator in airport projects ... All different teams (..) the in-house, consultant and contractor were working as a one unit, where we had to teach each other in some points."

"First of all we select the contractor based on a tendering process ... Meanwhile, we decide who the consultant will be from different offers too ... So, if we reward both of them, we develop the in house project team within the engineering department from all different disciplines ... The team has a project manager ... Project coordinator between in-house disciplines and external people as well ... And responsible to coordinate with other external department or stakeholders, operation, airport management, maintenance, different engineers and different disciplines within (..) the operator ... He act as a coordinator also between airport management and the contractor to facilitate the work, access and so on."

"It was clear as I have explained everything in the kick off meeting, each party rules and responsibilities from all aspects, e.g., legal, technical and so on ... Transparency and honestly was exist between all parties involved."

"The contractor completed the project successfully, he got his aimed experience, was so happy and good reputation and credit for him as he completed a high standard successful airport project."

Sub-theme: Project Goals (PG)

"Honestly project goals have developed by myself, actually based on my previous experiences in

different projects ... I was working with my department head continuously ... He was transferring all his project management knowledge to me and had insight on me to be good project manager in future ...

Sub-theme: Project Support (PS)

"(..) the private operator was going through a transforming period and many changes in the structure and the administration ... Due to that I was a bit lost ... (..) the public operator president gave me full trust and confidence to manage the project, he gave me full authority at the time."

"sure we were sharing everything, I think if the project success everyone in the team will be, and vice versa."

"We really spent lots of time during those days ... Team members were so ambitious and proactive, if they need any information they work hard to get it, whether by asking people or online sources."

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"They were relying on their own sources, online, standards and books ... We had Inex14, actually it was our bible (standard) ... In some case and in case I don't know or not sure what to do, I go back to my managers and seek their helps ... If team member got any problem, they do come to me but with solutions and different suggestions, based on our standards, project requirements or specifications I approve that or not."

Sub-theme: Project Team Efficiency (PTE)

"We were working in a teamwork environment, and from the very early stages of the project I was telling them that, project success is your success ... I was also always supporting the contractor ... I was working with him."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P5</i>	<i>Senior Engineering Project Manager - Domestic Airports</i>	<i>Development of Seven Runways</i>	<i>01:28:10</i>

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

"Is not just necessary to have owner or client project team ... The contractor should be suitable for the project, have enough and good experience, competence and capability ... If it mega project it needs a consultant ... In this case again we should have good contractor and good consultant ... If we have a small project, with no consultant, so we need a good in-house project team to take the rule of consultant ... Success of a project required good contractor and consultant and/or good in-house project team based on the project size ... Along with the people who are responsible for project coordination, facilitation and all project related have the required and adequate experiences ... The project can be succeed."

The project team should also contain young personnel so they can gain experience for future works related ... The client/owner project team should be hold all different disciplines ... Leader or project manager has an adequate leadership skills, experience in order to be suitable to manage and control a project ... Another vital party is the design consultant."

"A good project which I involved in is a development of 7 runways project ... There was a good consultant and contractor, the project team also amazing ... I was the senior project manager of the project ... Apart from the in-house people there were a consultant and contractor ... Our team main rule was to double check construction works whether from the contractor or the consultant."

Sub-theme: Project Goals (PG)

"Yes sure, you are talking about critical project, about runways. Everyone should be aware of time, work, responsibilities and all related, this is include airport tower people, airport manager, airlines, and everyone related and involve in that particular airport ... Runways were in 7

different airports, so the project was really associated with high level of challenge, we were upgrading all airport airside while they are under operation.”

“No actually, project goals have developed and designed in here (..) the public operator ... As you are responsible for those different airports ... You have to think in advance about expecting problems ... If you do not solve them now, they will be worse later on ... We developed project goals and we worked upon that, we got the approval then before getting into details and even select project contractor and consultant, as an owner ... After getting the approval we started project study and analysis stage and developed contractor and consultant RFB documents, which all that gone through different meetings to clarify related details ... All those details have to be clear in project scope and its specifications ... Should be so clear as much as you can to avoid problems during the construction phase.”

Sub-theme: Project Support (PS)

“If I need anything for the project interest they should provide it as soon as we ask for, as the critical status of the project ... it is runways and dealing with different aircraft that whether landing or taking off, any delay will have serious consequences.”

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“Actually, everyone was responsible for that, in case of any problem the entire project team will be responsible ... Everyone was aware of his responsibilities, and issues were reported clearly.”

“Project team can make decision as long as it is within the project scope.”

“This is actually one of the project manager rulers and responsibilities ... I had to manage it, go back to my bosses or vice president ... My project team, the contractor and consultant were reported to me and I was leading them in all aspects, and solving their issues and problems, if I could not manage it then I reported to higher authority.”

Sub-theme: Project Team Efficiency (PTE)

“Should have the required skills, abilities, competence and experience ... My team should be interested and got the experience for the particular task ... All must be responsible, interested and active ... If you feel anyone is not good in his job just replace him, I know I am a bit tough in that but it has to be like this.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P6	Senior Project Manager – Communication & Control Systems	Totally New Airport - Information Communication Technology of the New Airport	01:10:45

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

“The nearly completion design of (..) the airport ... I was responsible for all the communication control system and IT, new name of these things is ICT (Information Communication Technology) ... Air traffic control, air navigation system and anything to do with the navigation ... We had few people from (..) the public operator, more of them from the contractor ... (..) the public operator made arrangements through the contractor which allow us to hire certain people, we hire the people through the contractor ... Man power supplied by the contract.”

“We had 35 different packages, that means each project consist of major chunk of the whole airport, then for various reasons the government has decided to cancel this idea and they went to only 2 packages, instead of the 35, which become airside and landside packages ... This is very strange if you look at the entire world, airport projects are braking into many different packages ... it was a government decisions to make it just 2 packages.”

“I cannot say it as I am not with (..) the main contractor anymore and (..) the project manager who is supervising the contractor ... We are totally out of the project, but our part of design incorporates all the requirements, all the system required for a successful delivery and

operation of (..) the new airport.”

“Contract design consultant was (..) and my other stakeholders form ANS (Air Navigation Services) and from (..) the public operator.

“Everyone from (..) the public operator was very happy, ANS were very happy too, because we did care of their interests and requirements, they are the operator of the air navigation system ... We brought to them all design from primary of final design, we presented to them, ask them to review it ... We forwarded to the consultant ... We took the ANS guys to Paris to review things and actually see how Airport de Paris operates.”

Sub-theme: Project Goals (PG)

“Actually totally win-win situation, because our team from (..) the design consultant, in other discipline, who are responsible for the design of air navigation services or other special systems (communication control and security etc.), are very cooperative and they are there to incorporate comments of project stakeholders and operators, so we had no problems.”

Sub-theme: Project Support (PS)

“They very much forceful and very cooperative, anything that we asked for.”

“I have full authority in making decisions but I am always cooperating with the end users who are ANS to satisfy their requirements, who are actually the end users of one of the projects within (..) the new airport project.”

“There are more than 60 systems are involve in the airport, IT and many various things.”

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“We had discussed expected problems many times together.”

Sub-theme: Project Team Efficiency (PTE)

“I have been given a person and I have trained him ... If you are not trained, it is very difficult to understand the system.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P7	Senior Project Manager - Deputy Project Director - New Airport Airfield Development Project	Totally New Airport – Planning and Construction	01:10:42

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

“Let us talk about (..) the development of the new airport ... From planning stage up to construction activities ... We had a team on the late 90s, that team was developed only to make project planning ... So, we created a team from different disciplines and I was one of the senior members of the team in dealing with coordination and civil discipline ... We had invited so many international companies to participate in the design stage ... In a form of tendering process ... Then we have elected one of the company ... We discover also during the design stage that we cannot do the construction around the existing facility, so that project has been postponed somehow.”

“Then, around 2002/3 we created another group ... Different companies or contractor looked at this airport and collected different sites that the airport can be done on there in the existing area ... This was only (..) the public operator team ... We split into 2 teams, my group and another group, the other group were against moving the facility to different location and they wanted to do it around the existing south terminal.”

“Doing the new airport in a green land is the best choice ... We got the approval from the government to issue another design, we offered tender again and we received a company to participate in the design ... But even this project was not completed for some kinds of reasons and other difficulties. Again it was not practical and effective, but we use the same company to make the master plan for the whole airport.”

“We developed the master plan and then we make another tender for the design on the new site

... We selected 2 of them ... We awarded the contract and went ahead and started the project ... I was appointed as deputy project director ... We made then a lot of efforts with airport stakeholders, government agency, we have even made a debate during the process to bring all related government agencies and the private sector to participate in the team with us to see their point of views and we can take that and improve the development of the project ... This was during 2004/5 ... After that we invited (..) a company, we invited (..) geological company for survey, ministry of transportation and many other ministries ... We have also invited ICAO, FA, IATA and some operation people ... Because the experience is so important, and I think those type of people who you want to see and set with, they have the experience, especially IATA, they gives you services of this airport ... We managed to get all the feedback and comments and decide to build the airport in this regards ...The project was tendered for construction."

Our rule has finished exactly after we awarded the constriction package to a different team, who managed by (..) the CEO ... We said OK 'let us develop the airfield' ... I mean 3 runways, taxiways and aprons ... We considered the development of runways as phase one."

"We had only one contractor, we have other stakeholder who is airport operation ... We have also (..) a company were in charge of navigation and satellite systems sort of things and the (..) airlines as well."

"The design stage and the airfield projects were going in parallel ... Were working on the airfield project and at the same time in the design project ... We had a multi project at the same time."

"Defiantly when we meet with stakeholders we introduce ourselves, who is who, so if I was coordinating with the stakeholder ... I was acting on behalf of the director as deputy plus as coordinator to the external people."

Sub-theme: Project Goals (PG)

"It is a win-win situation for sure, as the airfield is not for me, it is for the end users ... The end users are the airlines and the airport operation ... They have inputs and requirements ... Decisions then are made from our side as we do the construction and the quality assurance."

Sub-theme: Project Support (PS)

"I have full support from my upper managers ... This is very important because if you have restrictions on your move, you cannot achieve what you want ... If I need any support I find it straightaway."

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"We always share and it is good to do teamwork ... In some cases we make decisions on our own, because if you want to leave it for stakeholders it will be endless ... you will never get their high level of satisfaction because of the numerous numbers of requirements ... External stakeholders always want more ... You need to make a limit on that."

"Without the team members you cannot do the work, so you need a team work strategy with our team members to achieve our targets and goals."

Sub-theme: Project Team Efficiency (PTE)

"I am a flexible guy and my doors are open, when there is a problem I found that my team always come to me ... My colleagues they like to share with me my ideas and thinking ... We share it together to make sure that I guide them to the right direction and if we agree all of us then, my team then can be successful in their work."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P8	Senior Project Manager – Head of Civil Department	Totally New Airport - Airfield Facilities Upgrade Project	00:52:10

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

"airfield facilities upgrade project ... Reconstruction and rebuilding of all the 3 runways, all the

taxi ways and a construction of the new apron ... 6 satellite fire stations ... We constructed a positive drainage system and we upgraded the airfield lighting ... We also built this project management office building (PMB) we are setting in right now.”			
Sub-theme: Project Goals (PG)			
<p>“Basic team was built within (..) the public operator ... They started to hire additional staff, expert staff ... Most important aspect, bringing (..) local staff from the very beginning and they get trained and then they can take control of the project.”</p> <p>“This is probably the biggest project in the history of (..) the public operator ... The first one that have (..) local senior engineers and they are really control a project of this magnify.”</p> <p>“Apart from (..) the public operator, we had (..) a company who supply the fuel to the site, within (..) the public operator organization we had ANS (Air Navigation system) ... We closely worked with air operation ... We must have two runways available, so you cannot shutdown 2 runways, we broken up 1 runway at a time and then closes up some taxiways, but however we had to allow the movement of aircraft from one runway to the other at all the time.”</p> <p>“(..) airport operation was very much involve ... (..) airport security ... We had to allow airside movement of construction personnel ... We had to make sure that airside was probably protected.”</p> <p>“Actually the whole project was under our control, however, when we needed we guided by all these departments.”</p> <p>“Without cooperation nothing can move ... It is like 2 wheels, one turn and other one has to return ... The cooperation it was a 100% cooperation among all parties.”</p>			
Sub-theme: Project Support (PS)			
“Obviously there is something remaining but nothing related to the project ... They were supported the progress of the work.”			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
<p>“We had series of meetings specifically, when doing the construction phase ... But we had to make sure that these two periods are not interrupted, one is the Haj period and the other one is Ramadan ... Those things you cannot compromise them but the other times, we were able to set down and work around.”</p> <p>“That is for sure, like if it is regarding fuel we have got (..) the supplier company, if it closing of the runway we go to airport operation, getting permission you go to security department to get a proper permission for vehicles and personnel ... We had meetings, there were munities of meetings.”</p>			
Sub-theme: Project Team Efficiency (PTE)			
“If I meet somebody new and he has not known me, you have to have period to get yourself familiar with each other ... Then once you build the confidence level then it is very easy to move around.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P9	Senior Project Manager – Head of Contract Control Department	Totally New Airport	01:16:52
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
“It is the new (..) airport project ... Around 2002, our project team was not more than 8 people, we focused at the time on the overall view of the project and its requirements ... All members were under (..) the public operator umbrella ... We have faced many obstacles ... It was not the right location due to the difficulty in future expanding ... From operation, we had a big issue too ... We had another issue in regards to security, how we are going to build a terminal in the middle of an active airport and its different facilities, this means you will suspend the Middle Runways, the West Runway and most (80%) of the South Terminal activities related to country			

Air Force ... The selection of that location goes back to 1992, where different committees who decided that ... before we joined the project team ... We realized that will not give us our required capacity, due to the limitation in space ... Altogether, security, operation and location problems were an indication of expected project failure.”

“We made our recommendations and presented to our president ... He invited the design consultant again, although their contract has ended and asked them to solve all issues ... We did not want them to proceed with it, and at the same time we were working with (..) an airport consultant to develop a new master plan, which was our main goal ... That will provide different alternatives for new location, and make every aspect clear and benefit the airport for the following 50 years ... they started to develop the new master plan from 12 tasks ... We added all our needs and requirements on the master plan ... We asked (..) another airport consultant then to do the final master plan with all its details and also the verification process for all airport utilities, along with a 3D survey of our airport status.”

“Later in order to ensure master plan quality and efficiency we have developed an international committee from ICAO, FAA, (..) a project management company and (..... and ..) various international airport operators ... We were hosting those experts once every month, so we review together every update of our master plan ... ICAO and FAA, work with us as at the end of the day they will provide us with all necessary certifications and licenses ... Once they know that your airport built effectively and efficiency form the front stages, airport reputation will be high. “We have selected the current location ... Have opportunities for future development/expansion ... We know that sooner or later (..) the public operator will run its own business form its own income instead of relying on government expenses.”

“We agreed on packages number and types, the package means project, e.g. terminal project is one package and airfield project is another package, as you need special people in each area ... We designed the project team which includes 42 individuals, all of them under the umbrella of (..) the public operator. Project team management comprises all different disciplines, from project controls to all engineering divisions, electrical, mechanical, civil, special systems and so on ... Following to that we assigned a construction manager, off house, for the entire project ... Later (..) the project designer has allocated, and the design process started.”

Sub-theme: Project Goals (PG)

“We had different workshops with all bodies, designer, construction manager and form our side people who are related to the matter discussed, whether from mechanical, electrical, civil or special systems or any other ... This is actually made project team familiarize with the project, and also reduce time that different approval needs.”

Sub-theme: Project Support (PS)

“In terms of daily management procedures, project team had full authority ... major items that required law, regulations and associated with contracts and financial related, these need upper managerial level decisions and approval.”

“First of all risk that associated with project works which is shared between project contractors and construction manager, because they are doing the actual work on field and our people have regular visits to project site to meet or review works ... The construction manager in charge of project risk management ... Another type of risk, which we are responsible for, is coordination process with government authorities and bodies and airport end users, actually it was a hard and complicated tasks ... Coordination process and obtaining all approval and licenses is our tasks.”

“Our project team comprised all end users ... If we are talking about customs we invite airport security, airlines and also any facility tenant and end users, as at the end of the day the final product will be for them ... It was a must to consider all their requirements from project early stages ... This is actually related to our own risk which we had to provide all end users’ needs and satisfy their different requirements in terms of planning and design stage.”

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“The procedure of developing the master plan was based on our 25 years experiences in developing airports projects ... During the process we tried to avoid different issues that we faced previously.”

“Other parties were following our procedures indeed, as we were working together ... All contracts were well defined in terms of rules, authorities, responsibilities and limitations whether in construction manager contract, designer contract or contractor contract ... There was not any ambiguity or hidden agenda in this regards for all parties.”

“As long as you are playing with clear rules with different parties involved and vice versa, and everybody aware his and others limitations in terms of authority and responsibility along with each other risks, so there will not be any complications.”

Sub-theme: Project Team Efficiency (PTE)

“All previous projects that started and have not completed, we did not participate on them ... I mean all 8 individuals who started this project have successfully completed (...) several airport projects.”

“When any team member realized that there is a proper and clear project plans ... Getting team members involve in every single detail of the project over the project life cycle ... Aware of what is going on ... Must be involved and aware of all details, team work environment.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P10</i>	<i>Senior Project Manager – Head of Mechanical Department</i>	<i>Totally New Airport</i>	<i>01:16:52</i>

Intension***Theme A: Project Team Formulation (PTF)******Sub-theme: Project Team Design (PTD)***

“The project started by developing in-house project team from different departments ... tendering process is to be followed along with evaluation phase ... Nominated designer and contractor are to be selected ... After submitting all design documents by design consultant, they withdrawn from the image as their role has ended ... (...) the public operator team will take over project responsibility in terms of monitoring and supervising activities.”

“All various project parties are aware of each other responsibilities.”

Sub-theme: Project Goals (PG)

“I think it is all around government interest ... Win-win attitude was not the case in my project experience.”

“Project goals do not foster through cooperation ... The first priority is government goals and then what has agreed in project scope or contract ... There is no clear cooperation activities during the development of project goals definition stage.”

Sub-theme: Project Support (PS)

“Project support when needed we, as a project team, find what we are looking for from the upper managerial level ... this is to certain level (directors) and not above that, where if any required it is the directors role.”

“(..) the public operator is responsible for the vast majority of project’s success or failure, if not al.”

“Project authorities are limited to in-house project directors and upper managerial level most of the time ... unless we got authority for special case.”

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"If not mentioned and discussed in developing project scope phase and other associated documents, there is not official sessions I have experienced in regards with that."

"Two methods have been identified ... A clear structure of where to ask is established and a formal procedures have structured in case of project difficulties ... solve them immediately or consult the project director if needed."

Sub-theme: Project Team Efficiency (PTE)

"High quality project is one of the most factors that always been emphasized by top-level managers ... Most of the team members (internal) is based on individuals experiences and skills so they generate some extent of confidence by select a member and there is a use of verbal communication to provide confidence."

Context

Organization 3: Private and Public Airport Operator

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P1	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:35:30

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

"we organized our project in organization chart taking the consideration of all fictional departments and the project requirements ... We need to have departments managers of both companies based on their experience".

"We have two companies in the joint venture... Different departments and each company has their own share in organization chart ... All the departments including departments' managers that are from both sides ... The second level of the managerial level selected equally from both companies ... They have a wide experience on building airports ... have more functions that have much influence on airport construction".

"Main stakeholder in this project are the client, the investors or lenders of the project and on the top of that is the owner which is the government body ... Most of the government authority can be also project stakeholders like police and security authorities, they have their own demands and we have to meet that".

"Everyone knows his role in the project ... the client who will operate the airport later know what is the relation with us ... and also with the owner ... They are at the mountain of the organization of the whole project".

Sub-theme: Project Goals (PG)

"First a master plan discussed by stakeholders ... We hired an international designer and submitted the concept design ... All stakeholders agreed on it".

"The lead designer do the whole design of the project from A to Z ... All stakeholders they have to contribute in the approval of each stage of the design ... The job is all our responsibility; it is called EPC (Engineering, Procurement and Construction) ... we as a contractor have to hire the designer to do the design ... have it approved by the client and other stakeholders who influence the project and then released the design for construction stage".

"Positive discussions among each other ... Many options in the table and they had to discuss them ... a conclusion this is the best design we need and they went for it everybody accepted including of course the client".

Sub-theme: Project Support (PS)

"Every company have an obligation to bring their own people into the project ... We had to bring part of the manpower and they (the construction company) had to bring the other part ... combine them within the departments, no matter if they are mix from here or there ... There is a

department manager and everybody must report to him ... It worked fine but sometimes we have some sensitivities here and there but all under control”.

“Sometimes there are some obstacles ... When you work abroad e.g. we have difficulties in arranging visas and also issuing visa ... They had to go and come back every couple of months ... Indeed, it is a common crisis for most of the companies working abroad ... We expect these difficulties ... One of the most constrain and painful in the project”.

“We are sharing the risk and the success too ... We as a local company feel that it is a very good experience for us ... We have a partnership with international company ... Next time we can the whole process of constructing an airport our self ... We have already started bidding for some local airports ... We are gaining the required experience and skills ... A great success for us and we are getting that from an expert and knowable company in this field ... This joint venture organization has an agreement that we have to combined ourselves in one company in this project only ... If we succeed this partnership may continue in some other places”.

“The decision should be taking by both companies ... Both of us should consider that even if in the correspondent that we send it to the client or other stakeholders both of us have to sign the letter ... We share everything ... In giving instructions and doing other things ... We give (the construction manager company) the leadership due to their wide experience on airport projects ... Both companies hold 50/50 shares as they cannot do anything without coming back to us ... The agreement is clear”.

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“whenever there is an issue at site we all share it together it, discuss it and come out with conclusion ... They are more expert in airport construction and this is their only advantage, but the rest is ours ... We have been in this field the construction market for long time in (the country) and we know most of the industry surrounding areas”.

“The nice thing about this project the communication lines are so strong among team engineers ... let us say the line of all traffic of reporting, everyone knows what to report and where as we have clear structure of this ... We really have expert and top professional engineers from both companies whether in construction, communication and dealing with project management practice and other colleagues”.

Sub-theme: Project Team Efficiency (PTE)

“Airport standers and requirements are different and also airports have different systems that not exist in other buildings ... Baggage handling system is entirely new for us, the passenger boarding and bridge system, security and communication system of airports, the building management system is much different than other buildings ... The structure work is like any other buildings ... What we have learnt in this project is construction and standards of different systems that exist in airports and different requirements from the owner and dealing with all different bodies involve in airport's project which are all new for us”.

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P2	Project CEO	Totally New Airport	01:37:37

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

“We (The client) are the investor and operator for new (..) the Airport with a concession agreement with country's General Authority of Civil Aviation (GACA) ... (..) the client is consisting of three shareholders, (..) the construction manager, (..) and (..) the contractors with equal shares ... (the construction manager) one of the leader in airport business and airport construction and operation ... We established another company as an operation company, (..) for operation, which is concentrating on operation issues for the existing airport ... We deal with three lenders (..) the country (Three Banks) who are financing our project”.

“25 years just for the construction ... (..) the owner is getting their concession fee each quarter 54% out of the company total income”.

"BTO agreement is not like the other BOT agreements because the airport has to be under the government authority and ownership ... Two of the three shareholders created the joint venture of the construction works (..) and (..) the construction manager and the contractor ... We signed with them a contract to construct the new airport".

"I am the chief executive officer (CEO) of (..) the client as the project investor ... We have also another sister company (..) for operation also it is own by the same shareholders with a different percentage to operate the existing (..) airport and also the future one when completed".

"The main contractor has his own sub-contractors".

"We hired an independent consultant (..) specializes in airport projects in particular ... Through cooperation between us and (..) the government owner to be sure about the minimum technical requirements for airport construction process".

"There is also (..)the consultant of the contractor for design details stag ... doing the ABC contract (engineering, procurement and construction)".

"we are checking their (the contractor) performance on site, visiting the site in a regular basis, approving their invoices, checking the monthly report, the progress, facilitating the contractor job, coordinating with all government related authorities in order to provide the contractor his requirements ... All connection services have been coordinated with government authorities in order to provide them at the right time to the contractor, access roads to the airport and surrounding areas, etc. all the mobility issues have been coordinated to the contractor ... we are acting as a project manager for the contractor".

Sub-theme: Project Goals (PG)

"Project goals, general project theme, project conceptual design agreed and approved by the owner ... We had a monthly meeting during the design stage to approve all materials selection, the final design, discuss all operational issues of the airport in future, maintenance aspects".

"We aim to have the environmental certificate (friendly to the environment). The contractor is targeting to achieve the silver category of project friendly environment scheme".

"The client, the owner represented by public and private partnership department and group of engineers (architecture and technical staff), project consultant ... give comments for the design stage ... Review all documents ... Very fast track project ... We do not want to allow any delay ... the construction was going in parallel with design ... we have a team of design and reviewing at the contractor head office ... We have engineering team at project site ... Receive the final approved drawings for construction activities".

Sub-theme: Project Support (PS)

"There is a board and a chairman of this project where below the board is the executive committee ... I am dealing with the executive committee on monthly basis to solve all important issues ... limited authority I have ... I receive a full support ... This is a large investment and everybody have an interest ... It is a shareholders investment and we have to take care of money related issue and scheduled timeframe ... the contractor will hand over the project to us ... We consider as a client for the contractor ... We will transfer it to the operator".

"In the event of any major issues (major decisions, cost impact, time change) consultation processes between all shareholders take place to get all consents required".

"The contractor has the know-how ... The most experience in airport construction projects ... You can consider them having the power ... The contractors role basically regarding internal matters and political issues in the project ... The client the leader in project direction, guidance, construction opinion and the best practice ... They take other parties' approval".

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

"We have an integrated team including an ORAT project manager ... Solve all expecting problem ... Coordinate with external stakeholders (passport department, custom, detectives, traffic authority and police, airlines and all people involve in the airport) to understand their requirements, offices, locations, monitors' points, checking point, tickets' desks etc." ... Provides the external stakeholders with the necessary training needs ... under the umbrella of us (the client) ... I am supervising them ... They Coordinate between the contractor and an operation company to see how the mechanism of handing over stage ... Any problem we predict in the

future we will try to solve it, provide solutions, put alternatives and coordinate with (..) the owner if they involve".			
Sub-theme: Project Team Efficiency (PTE)			
<p>"following up my team, being aware of each team scope, roles and job duties ... This is one of important factor to be sure everything is in right order and track ... Also individual evaluation and individual scope, roles, responsibilities ... When well developed and follow up are an indication of following right project track and ultimately develop team confidence ... We achieved good results, we are actually ahead of schedule".</p> <p>"The first project privatize by (..) the owner in (..) the country ... (..) the owner is giving us all support needed in order to succeed in the project ... Shareholders are really expert and they have the intension to succeed ... These factors give us the success ... A serious contractor in his job responsibilities".</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P3	Senior Project Manager – Leaders of Project Managers of IT Airport Construction Project	Totally New Airport	01:16:11
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>"The complexity of the project actually it the highest one ... The most complex which make it the best".</p> <p>"The IT department has the full load of airport IT ... This project in IT part has the whole system, the structure cabling and special airport systems, airport operation, data basis, CUTE workstations (Common User Terminal Emulation), FIDS monitors (Flight Information Display Systems) and all kinds of airport IT systems ... The baggage system ... Also some governmental systems (police, customs or security ... Full package of airport IT process plus the design ... I have my team with a design manager, a system wise designer not the architecture ... Our construction team working in conjunction with the design team ... We have the IT construction engineer here ... Responsible for site works and following up the site works from IT point of view ... All team members are belong to (..) the construction manager company".</p> <p>"Some parties from outside ... Only sub-contractors not within our team ... Our structure here is different ... (..) the construction manager IT team is working with us for the design part ... They are going to operate the airport ... They are my customer/client at the same time they are sub-contractors ... It is a conflict of interest".</p> <p>"Stakeholders in this project are so many ... (..) the owner, (..) the client, (..) the construction manager, airport customs, airlines, (..) airport ground systems and other companies like catering and duty free and of course so many ... To some extent they involve in IT process ... We had some meeting with some of them".</p> <p>"Everyone here knows everybody's tasks from the starting point".</p>			
Sub-theme: Project Goals (PG)			
<p>"The designer (..) the construction manager .. Going to operate the airport ... We did is deep analysis of the IT structure ... The good thing here is that you are not only building the airport like our previous projects ... in BTO, you make a design and the IT structure according to that design which should satisfy the customer ... your company for 25 years which is the challenge ... Project goals must benefit and satisfy everybody ... This is the real challenge".</p>			
Sub-theme: Project Support (PS)			
<p>"Everything we need"</p> <p>"Shared between (..) the construction manager and (..) the contractor ... This is a joint venture project".</p>			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			

<p>“We do this all the time”.</p> <p>“Team members aware where to ask ... I developed the structure ... They always ask me in case of any problem ... it depends on the level of the problem ... The design team has the freedom to solve minor problems by themselves ... The construction team solves minor problems at project site by themselves ... I encourage and ask them to solve those problems ... Anything that has an impact they have to bring it to me”.</p>			
Sub-theme: Project Team Efficiency (PTE)			
<p>“We are talking to each other a lot ... Spending so many times talking about the project, what we have to do”.</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P4	Senior Project Manager - Quality Assurance & Control Manager	Totally New Airport	01:32:38
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“There were a lot of people in the team ... If I see anyone of my team need development I start to make some training and other things ... They maybe need some experience, other people have experience ... I like to work as a team not personally ... Trying to push them to learn other disciplines subject, not only focus on their own work”.</p> <p>“This is a joint venture project ... Half and half, from both parties (..) the CM and (..) the contractor ... They are sharing 50/50 the project ... The system here is different ... We have pushed subcontractors to make their own QC and QA team, and they have to check on site as a first step ... Second step check by package manager engineers and other members of his team, each discipline (structural, mechanical, electrical and etc.) has a head and we are calling them as a package manger. Last step is making the spot check ... To correct particular points ... We are working as a consultant not as a QA and QC team within a contractor ... We are overloaded and our responsibility is more ... We have to check not just the site but also the people ... We are a consultant for the package teams, the joint venture construction group”.</p> <p>“There are many quality groups in quality team ... We have a structural team on site ... We have also a construction team in our group”.</p> <p>“We have to share each other responsibilities and everything ... We have to inform each other and share all information ... It is very important ... This is a team work ... If we cannot do it like that we will fail”.</p>			
Sub-theme: Project Goals (PG)			
<p>“We are only doing all kinds of quality ... There are some groups that are directly connected to project director, the top management, these are HSSE (Health Safety Security and Environment), quality control and project control and other finance group ... Checking the entire project not just specialize in one area ... Under that there is the construction group”.</p>			
Sub-theme: Project Support (PS)			
<p>“Yes of course they are shared ... Everybody has to start this from the begging ... The quality is a must ... We have to be like this ... Otherwise we cannot finish the project”.</p>			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
<p>“We are trying always before finishing any product ... If we wait until any production on site finish ... It is an easy way but not the right way ... Otherwise we cannot finish the project on time ... we do not have to wait until they make a mistake”.</p> <p>“We have a structure ... We all did this structure ... I am the leader and trying to develop it”.</p>			
Sub-theme: Project Team Efficiency (PTE)			
<p>“Everybody when come or assign to this project have to know ... This project is a high level and needed project ... Complex projects ... Trying to choose most people that have experience in other airports’ projects ... It is not enough ... Teaching them and sharing experiences”.</p>			

Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P5</i>	<i>Senior Project Manager - Contracts, Cost Control & Procurement</i>	<i>Totally New Airport</i>	<i>01:01:06</i>
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>"It was financed by (..) A Bank ... The team has been formed mainly from (..) the main contractor and (..) local company ... We had another partner, subcontractor ... (..) the main contractor doing almost 86% of the project value ... 14% for the other partner ... (..) Public company for Roads and Bridges ... (..) was the main contractor, project leader, project manager and everything in the project where the other partner just for external works ... The owner of the project is (..) local airport company and they represent the government body".</p> <p>"the project was based on tendering procedure ... (..) was the main contractor and (..) the subcontractor ... (..) the owner have two consultant firms ... (..) project manager and (..)the design consultant who did all project designs and specifications ... these two were under the control of (..) the owner".</p> <p>"(..) the project manager were responsible for controlling the project above (..) the main contractor ... Represent the owner in the project ... Even (..) the design consultant were below (..) the project manager ... Employed by (..) the owner but they were controlled by (..) the project manager company.</p> <p>"The project mainly BT, construction and then transfer it to the owner".</p> <p>"100% all project stakeholders were aware of each other roles and responsibilities".</p>			
Sub-theme: Project Goals (PG)			
<p>"There was some kind of a weakness point in the project design, as it designed 15 years before the construction phase ... Technology has developed and upgraded ... Airport location ... Political debate took 10 to 12 years ... we were instructed by the owner to find out any recent technologies and implement that in the airport ... (..) The main contractor, CM, has developed the project goals which then approved by (..) the project manager ... It was developed based on all parties' benefits".</p>			
Sub-theme: Project Support (PS)			
<p>"To some extent ... Not extremely high ... It was a good support ... Because the lack of experience of (..) the owner in regards with the management capability ... Below controlling such mega project ... Some political issues".</p> <p>"All belong to (..) the CM ... This is more like a consortium rather than traditional relation between contractor and subcontractor ... Our process and cost control is separate and theirs is separate too".</p> <p>"We (the CM) take decisions of the project 100%.</p>			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
<p>"We have had many problems ... A good system called Dispute Review Board (DRB) ... Established in the early beginning of the project in order to settle and resolve any dispute that may arise during the construction ... Otherwise we could have been disputing and going into debates until now ... Arbitration team composed of three members ... one appointed by us (the CM) ... Another one by the owner and both of us appointed the chairman of the board ... Was very effective and very successful in order to solve any problems and obstacles that may arise".</p> <p>"We had a clear structure for this purpose".</p>			
Sub-theme: Project Team Efficiency (PTE)			
<p>"From the begging ... Successful selection of highly qualified team members ... Basic support for assuring high quality work ... The qualification and wide experience of (..) the contractor project manager CM".</p>			
Context			

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P6	Senior Project Manager - Project Finance Manager	Totally New Airport	01:11:56
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>"This project is a joint venture cooperation ... (..) The owner announced the project tendering, different alliances have been appeared ... We are one of those collaborations ... The alliance is 50/50 including a leader of the joint venture ... Positions were based on the know how in each field ... (..) the contractor is a local company ... Administration and government relations, accordingly the head of project administration has nominated from the contractor ... At the end of the day we are working under the umbrella of (..) the joint venture project as one team or company ... We sat together during roles and responsibilities distribution process of (..) the joint venture agreement and have developed an authority matrix and management levels".</p> <p>"(..) the owner and (..) the client ... (..) the construction manager and main contractor of this project ... the CM company has two divisions the construction and operation ... the contractor too".</p> <p>"Mainly they are only the two partners (..) the construction manager and (..) the contractor ... Also (..) the owner, (..) the client and (..) the independent consultant engineers".</p>			
Sub-theme: Project Goals (PG)			
<p>"(..) the CM has the experience and know-how in airport business, they are the leader of the project ... The project director from (..) the CM and the deputy project director from (..) the contractor.</p>			
Sub-theme: Project Support (PS)			
<p>"A full support is there and the best thing ... Unique in this project ... The same partners are in the construction and will be in the operation too ... The faster you finish the project the more earning you will get ... I am talking about quality, cost and time ... The project time scale is 32 months, including testing and commissioning period".</p> <p>"100% it shared between project partners ... One of the great government achievements when you assign a project to a private body and they achieve the target on time and expected quality".</p>			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
<p>"We have met and discussed so many times ... Imagine that the subcontractor of baggage handling system field, how many problems and suffers will the main contractor be faced ... the baggage handling system is connected with many other milestones whether before or after the installation ... We have been discussing all those issues in a regular basis and consider them in advance ... Experience and the appropriate managerial skills that our project director has really helped us".</p> <p>"There is a structure and it should be there".</p>			
Sub-theme: Project Team Efficiency (PTE)			
<p>"I believe in people investment ... I have assigned the assignment for each individual based on the function and started then to concentrate on the weaknesses he has ... I used to invest on them and teach them my experience ... We used to share some information from outside parties like external auditors, so I arrange seminars ... I try to enhance and solve individual weaknesses ... Make him good enough in that by explanation, teaching, instruction and examples ... I implement test practice with him on that issue many times, even if he fails one or two times I will not have any problem with him ... Manager role in not just giving instructions ... Develop his team, support and pack up them ... I do arrange training sessions and try my best to develop my team".</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P7	Senior Quantity Surveyor	Totally New Airport	01:05:57

<i>Manager</i>			
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“(..) the client has developed a partnership that involves (..) the CM and (..) the contractor ... In a form of BTO (build, transfer and operate) contract ... The length of the contract is 28 years including a construction of new airport and operation ... We both are construction companies ... We are working in harmony in very good environment ... I have five people in my team ... Two people are from (..) the CM and the rest from (..) the contractor side”.</p> <p>“We set and have meetings together and we are so flexible ... they can easily come and ask any of my team members whatever they want ... There is a very good relationship between different departments”.</p>			
Sub-theme: Project Goals (PG)			
<p>“Main goal of this project is to finish the project as soon as possible within quality and budget ... goals developed from our (..) the CM experience ... All departments know and understand what they need to do ... If you do not do your job well, everybody will see you ... All departments must work hard ... Everyone must be very honest”.</p>			
Sub-theme: Project Support (PS)			
<p>“If we need, we get hand from them”.</p> <p>“Success and crisis shared between us”.</p>			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
<p>“I do set and speak with my team very often and discuss possibilities of problems ... With other departments ... When needed ... I have project procedures and strategies that established at the beginning and everybody behave according to that, and this is very important ... I prepared to them and them and the accepted”.</p> <p>“They direct anything to me”.</p> <p>“If the matter is important, I meet and speak immediately with people involved and solve those difficulties and problems”.</p>			
Sub-theme: Project Team Efficiency (PTE)			
<p>“I really respect them ... I trust them ... Trust and respect ... I never argue with them as I want them to improve themselves and I help them ... I let them understand how they help and develop themselves ... They will respect you ... My team can speak comfortably with each other without stress or pressure. All this is very important in team environment”.</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P8</i>	<i>Senior Project Manager - Health, Safety and Security Manager</i>	<i>Totally New Airport</i>	<i>00:54:22</i>
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“In our HSSE department there is only one manager ... I have 6 HSSE supervisors not including subcontractors’ supervisors and managers ... team that 5 of them belong to (..) the CM Company and just one from (..) the contractor side ... there is around 15 subcontractors’ supervisors/managers and all of them are working on site ... Each subcontractor has one safety representative on site”.</p> <p>“All members aware of their roles in the project”.</p>			
Sub-theme: Project Goals (PG)			
<p>“We are managing all subcontractors working on site ... We set together on a monthly basis and have HSSE meeting ... All subcontractors’ safety representatives are attending those meetings, we discuss major safety issues ... We have also weekly site works with all safety representatives (..) the CM, (..) the contractor and subcontractors”.</p>			

Sub-theme: Project Support (PS)			
<p>“They are supporting us, any time we need anything they provide it ... Materials, workers, third party training ... They are providing anything ... Third party training for operators”.</p> <p>“A site construction supervisor is the first responsible person for safety issues then construction safety supervisors ... Subcontractors’ supervisors and then the officer supervisors and then construction supervisor and then HSSE from contractor site and last one is the project manager”.</p>			
Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)			
<p>“We discuss full tasks and works with workers ... We are doing this together”.</p> <p>“We have emergency contact list in case of any minor or serious accidents on site ... We have six numbers, HSSE manager, HSSE supervisor, administration manager, site ambulance, doctors and fire department”.</p>			
Sub-theme: Project Team Efficiency (PTE)			
<p>“We are monitoring and promoting the people who are acting in a safe way ... We are doing the punishment (the valuation side) ... If the people are acting in a good way we are promoting them ... We are giving them the confidence to work for us”.</p> <p>“we have three ways ... go to a guy and touch his shoulder ... The financial benefits ... promotion ... We issue also certificates”.</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P9	Senior Project Manager – Design Project Manager	Totally New Airport	01:15:37
Intension			
Theme A: Project Team Formulation (PTF)			
Sub-theme: Project Team Design (PTD)			
<p>“Tender stage was quite early as it took few years before we started ... The concept design was based on a master plan provided by the client ... (..) the owner got the master plan of (..) the new airport from (..) the designer ... (..) the owner and (..) the designer, as an airport consultant, jointly created what we call the MTR (Minimum Technical Requirement) ... Building this airport at the least specifications and requirements ... 8 groups have participated in the tender ... We were one of those group (..) the client, (..) the CM (..) the contractor ... We won this ... (..) the client created an airport operation team ... like an organization from the 3 major companies to deal with project fund, tendering issues and award the construction contractor which is us (the CM)”.</p> <p>“the organizational chart actually was submitted to (..) the owner with the tender ... The structure of the entire organization including the design ... Managing the design but not designing the new airport ... The client gave us the outline of the project, the land, capacity and just few drawings ... We employed a lead architect who has experience in airport design to completely design the airport”.</p> <p>“(..) the CM and (..) the contractor together in a form of a joint venture ... To execute the project ... The whole building period is 36 months ... The main challenge here was to have a team and start the construction after just 4 months of the design and the entire design have not finish yet ... This is one of the mega challenges of design and build in a limited time frame ... 11 different consultants for all disciplines from the designer side then employed ... they created a team of 12 entities led by (..) the designer to deliver the design ... intensive coordination and workshop meetings ... The people that we employed are the head of every discipline ... we have only 7-8 people for only attending meetings and to have like a maestro who guide others and we communicate together”.</p> <p>“At the same time our team is dealing with project stakeholders, the local authorities, (..) the owner and everybody else ... we have many interfaces ... Meetings and so on to know their requirements and to make sure the design is on the right track ... The design we are working on is based on RIBA (The Royal Institute of British Architect) plan of work ... Normal contractor is</p>			

focusing on how much I can make profit but for us is different story; we have to finish early so the operator can make more money from what I lose ... We are trying to focus how we can achieve the best output in a minimum time and to benefit from technology”.

“Yes of course ... We had almost a weekly meeting ... It was a workshop meeting and sometimes we have 40 people in the same meeting from all different disciplines setting together ... We set as a specialize team to discuss their problems”.

“We have to gather the information and present it to all parties, those parties will gather in smaller groups and come out with solutions to solve the main aim of the project”.

Sub-theme: Project Goals (PG)

“There are different goals for every discipline ... My goal as a design manager is to finish and deliver the design fully coordinated on time without delaying the construction ... But now construction goals are different ... Finish and complete the design on time as a final completion, and partial completion of what they need on site ... We have to be always ahead for one or two weeks from site team ... Design progress is much faster”.

“This project is one of the best project for all parties ... The government, (..) the client and everyone to the financial body, everyone is wining in this project ... PPP (Public Private Partnership) by far is better than any type of contract in construction ... If you want to make a strategic project in a country and the government has involvement on it, the best way to do it is the PPP”.

Sub-theme: Project Support (PS)

“From day one I have full support ... We communicate a lot and everyone know his role and the upper managerial level also know the criticality of time as we have to finish on time”.

“Yes of course it shared ... If you set today with (..) the owner CEO, he feels that this project in his own success ... The head of (..) the owner investment projects will be the same ... Our project director, this project also is his success ... If you come down to the lower level, an engineer at site, he feels this also ... No one climb alone to the success, it is teamwork”.

“It is very important to have an open book structure, honestly and transparency with all parties ... We are following this in the project from day one, we are not hiding anything ... If you really work with transparency and place all your problems and obstacles on the table open to everybody, everyone will be comfortable to say his words and views ... Tell you this is right or wrong ... This will improve the relation between all parties ... PPP project that is not moving well, this means there are no transparency and some agenda are hidden”.

Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)

“We were actually speared everywhere plus here ... Everyone knows exactly who is responsible for everything and there were not any gap on this, there is not any gray area in design responsibilities”.

Sub-theme: Project Team Efficiency (PTE)

“There is no high quality work but there is accepted quality work ... What we need to achieve and what is agreed in our contract ... I do not put many pressures on my team ... I do not blame them for every minor mistake ... I defend and support my team when they make mistakes ... I take full responsibility towards top management unless they are careless ... Mistake happens ... I am always encouraging and supporting them, they feel comfortable to work ... You have to know your team

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P10			

Intension

Theme A: Project Team Formulation (PTF)

Sub-theme: Project Team Design (PTD)

Sub-theme: Project Goals (PG)

<i>Sub-theme: Project Support (PS)</i>
<i>Sub-theme: Problem solving - Issue Negotiation & Resolution (PSINR)</i>
<i>Sub-theme: Project Team Efficiency (PTE)</i>

10.2 Theme A: Project Team Formulation - Data Interpretation

10.2.1 Organisation 1 – Private Ownership Structure

Organisation 1's (O1) senior project managers selected various successful project experiences in two major airports in the country where they operate. Every five years the private operator releases a strategic programme of airport business plans that clarify its agenda, direction and ambition regarding several airport operations, management and development practices. Currently, the private operator is adopting quinquennium 5 (Q5) strategic plan. All management practices, construction-related works and expected culture and behaviours are included in the plan. Various business cases provide future activities within a five-year period for all airport projects. O1P9 clarified that the planning and programme director is responsible for all development projects, in specific project programmes, and deals with key airlines, airline operator committees and governance bodies (CIA) during the initial stage of a project, in terms of prioritising projects and associated coordination and negotiation activities. Airports' project funds are generated from charging numerous airlines when landing at airports, and the CIA determine and control the amount. Thus, an organisation's construction project managers can determine the number and size of projects within a five-year period.

A structured procedure for forming a construction project team is often adopted within an organisation. In the typical process, a senior project manager, who will act as a project client, is assigned to a new project, taking into account his/her experience and competence as regards the specific project type. O1P6 stated that following this, the senior project manager selects a project manager and project in-house functional team members, who specialise in different areas, quality and control assurance, health and safety, design, industrial relation, environmental management and contracting support. They would have been selected during the development of the project business case. Project support and other team members come from various areas, management services providers, framework contractors, framework consultants and local project integrators who represent project suppliers. All these organisations have signed a five-year contract agreement with the private operator to support its various projects. According to O1P4, management services providers (MSPs) support the construction project managers; they provide the expertise in a programme, cost, schedule, risk and contract management and work in a number of different projects. Framework contractors are experienced performers in an airport environment, who have been nominated

by the private operator on account of their reputation in airports or mega projects (O1P7). Framework consultants are also different expert organisations, who provide consultancy services in various areas, e.g. financial, design, communication and health and safety management (O1P6). O1P1 mentioned that a number of key stakeholders may also consider team members and work with the project team throughout the project lifecycle, e.g. airlines, people from authorities, immigration and various people from airport functional areas. O1P8 remarked that “we have so many stakeholders, if you do not go to all of them and then miss one out, that one can still stop your project.” Thus, all these different individuals together form the construction project team. This team can be in a virtual form as well. O1P3 noted that:

...if I need anyone else to support the project I call on people who already have their dedicated day jobs. It is more of a virtual team. I do not have a line diagram that says here is my project team, range of people who are allocated to support me in delivering the project but they are a virtual team. It is around my ability to influence them to get the project delivered.

However, all parties are clear about their roles and accountabilities with other project team members, delivered through the senior construction manager. O1P10, a programme director, highlighted an important change in the construction team selection criteria, which has arisen following the quinquennium 6 (Q6) development plan. It concerns all people in a project. A psychometric test is used to form a project team, and the project director considers whether an individual is RED (a delivery director or manager), BLUE (a detail oriented person who likes spreadsheets and is very introverted), YELLOW (a sunshine person who motivates people and has leadership characteristics) or GREEN (a person who likes to talk to people in the field). This is in order to develop a balanced team in terms of skills and people types, as some like the development stage of the project, some the site and others the close out. Different interviews are conducted with either project contractors or consultants to select the most appropriate parties for a particular project.

The main project goals are established at the beginning, in particular, during the brief development stage of the project (O1P9). A further stage of project development occurs when project team members, internal and external, meet and discuss their particular needs, and what is required from each party to support the project becomes clear to everybody. The

senior project manager plays a fundamental role in explaining the nature of a particular project and its objectives to all parties involved (O1P3). O1P7 remarked that one of the crucial factors which makes a project successful is that various parties have a number of common goals and everyone jointly works towards achieving those goals. Every organisation in a project environment focuses on working together, completing the project and effectively achieving its goals rather than the needs of an individual company. However, each party has slightly different priorities that, ultimately, do not affect the main project goals. O1P1 pointed out that internal and external people try to operate collaboratively through arranging numerous goals review sessions on a weekly or monthly basis; while in some projects there is daily contact between key stakeholders depending on the progression of the project (O1P9). O1P7 stated that the internal project team and a representative of every external team meet together every week, and also mentioned that “we all were working together as a single team”. In line with this, according to O1P3, in her project experience, everyone works in the same building or at least within the airport boundary, which facilitates a series of weekly project meetings that include all parties and sometimes separate sessions arranged with specific entities when needed. O1P5 remarked that “we generally do that anyway. The way we work is to try to be collaborative, and yes you have the occasion where people have got competing and requirement some priorities but we usually apply that.” Furthermore, all established project goals are based on a “win-win” approach for everyone (O1P6). Rather than making more profit than somebody else, everyone in the project performs successfully and, in an airport environment, a “win-win” approach is needed to achieve that (O1P8). He also added that “because I am a client did not mean I had any more authority than anybody else. Even that with the hierarchy, everybody was working at the same level and everybody had the same goals.”

Upper management level within O1 provides the required support to various airport construction projects. Senior project managers also have the power to perform their tasks effectively (O1P2). However, monthly programme review meetings are arranged, which comprise board members, project sponsors and other key management people within the organisation, as well as the construction project manager, who reports on performance monthly to the airport executive. She also stated: “I have always support when needed, I was given a free hand to do what I needed to do, and so I have given very clear business objectives and what needed to be done.” O1P5 agreed and mentioned that “go and do this and come back to us if you need any support” was the message from the organisation’s

director. There is also another form of monthly programme review with directors, where senior managers present related project information and project status within a project dashboard. O1P3 stated that most accountability and authority are established at the board level, and construction managers have responsibility for a project's day-to-day decisions; while decisions concerning financing have to be referred to the board. Accordingly, senior project managers rely on their abilities to influence and their network connections to be able to clarify issues; otherwise, these would be escalated to upper management level (O1P4). With regard to project success and crisis, project risk is generally split and shared between the private operator and contractor companies (O1P9).

The following Table 9.1 illustrates how project managers deal with team efficiency and create confidence among team members, which ensures quality and high working performance.

Table 9.1: Organisation 1 Project Team Efficiency Practices

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O1P1</i>	- In terms of moral etc. which is sort of soft skills and motivating people, this is work ... we are very control driven ... we have a monthly projects reporting structure, a dashboard ... We use the value management rigorously ... the contractor has to prepare all the monthly reporting data ... We review the progress on site with the contractors ... They review their suppliers ... It allows us to make assessment on our progress.
<i>O1P2</i>	- Being available. - They can talk to you and share their challenges and concerns with you. - You need to be supportive both in the professional and the personal level. - Come and talk to me.
<i>O1P3</i>	- Making goals, objectives and responsibility clear. - Reviewing as we go along of performance and where we are. - Making sure that people of thought through probably. - How they are going to do the next piece of work and that it is well thought, well considered and well planned. - Encourage and influence as much as possible that we are all, as a project team. - Getting the most out of everything we do.
<i>O1P4</i>	- Try and create collaborative environment and trying to maintain that for our people even when you have very difficult issues.
<i>O1P5</i>	- We keep the pressure on
<i>O1P6</i>	- Very open and honest. - Have to set expectation. - Be very approachable. - Be very supportive. - Trying to handle soft skills rather than task skills ... You have to do the task skills but while you go doing it.
<i>O1P7</i>	- I set very tough targets. - I got the whole team into a room and said we have to make this date ... in my

	mind I knew it was possible and we just drove towards that. - You need to be quite flexible on how you ultimately settle and deal the changes with them.
<i>O1P8</i>	- Clearly set out what their responsibilities. - Leading all the project managers and allowing them to get on with do what they need to do. - Supporting them on that rather doing it for them. - Encourage them. - Come talk to me. - If there is any problem I help them with them.
<i>O1P9</i>	- I am realistic in what I expect from them - All about knowing, which roles, which procedures, which governance applied to each specific area of the airport.

O1P1 stated that the problem solving process, including issue negotiation and resolution, between internal and external construction parties, is a common practice within the construction project. In a specific project, this process is not applied in advance as its replacement project manager is assigned to the project when behind schedule and facing a crisis mode of operation (O1P2). Senior project managers have experienced in their projects various meeting arrangements between team members to discuss and share ideas without any barriers in this respect (O1P3, O1P4 and O1P6). However, they are accountable and authorised to take issue-related decisions. This practice always happens during the project scope development stage, when in-house people and key stakeholders, design team, airlines and operation people, are brought together to talk about needs and requirements. In this regard, O1P5 mentioned that “in the early days we had several sessions where we were talking quite openly, you know, about what if we do this so a lot of different scenarios.” O1P7 described the problem solving process as a valuable practice in a project lifecycle and encouraged people from different disciplines to meet early and discuss the basic outlines, programmes, schedules and processes of what they are going to build. He also emphasised the importance of using visual diagrams, as these facilitate the understanding and resolution of issues. O1 has a clear structure when project difficulties arise associated with risk; as O1P8 noted, “at the beginning of the project we begin to do brainstorming bits, what are the risks, how we can mitigate them, who is responsible for the risk and then as the project evolved we probably review that each month, so keeping up with managing the risk.” The project change control department is responsible for project risk. Moreover, the programme director, project managers, programme office, commercial team and support team (including cost and risk manager) meet first and discuss risk related matters. Subsequently, a project manager and his commercial team meet with the contractor for project control change system

purpose. O1P9 is very pleased with this scenario and the level of cooperation of the senior project managers of external parties. He stated, “there are mutual respect between me and their senior project managers, in terms of what I expect from them and what they expect from me, it is a good relationship.”

The project construction team share and discuss site issues. In this context, O3P1 discussed the strong communication lines within a project which help them to resolve difficulties and are considered a great feature of the joint-venture agreement. The project has a team called ORAT (Operational Readiness and Airport Transfer) that works and coordinates with the construction project team to solve issues regarding external stakeholders, and deals with all external people involved in the project. This group is also responsible for all coordination activities between the operation and construction team during the project lifecycle. In each department there is a clear structure of reporting and solving project issues, and team members know what and where to report. O1P3 encouraged his team members to solve minor problems at the project site, which do not have serious impact potentially; otherwise, they have to follow the established procedures. Paying attention to problems in advance is also encouraged in a project environment; quality assurance and the control manager (O3P4) emphasised that they are always trying to do this as “otherwise we cannot finish the project on time.” O3P6 explained that in such mega projects any issue or fault may affect other activities milestones, which would seriously delay the project and increase its cost. Nevertheless, the project director, who has extensive experience and appropriate managerial skills, has helped the project team in dealing with this matter. O3P7 emphasised the importance of project strategies and procedures that were established at the early project stages and effectively delivered to team members, who have to behave accordingly. He responded immediately to problems and encouraged face-to-face communication with parties involved in important matters.

10.2.2 Organisation 2 – Public Ownership Structure

O2’s senior project managers have experienced a number of successes. Various projects have been selected, from building a totally new airport to airfield and landside development. The engineering department, which is responsible for project planning and development, is divided into two units: domestic and international airport activities. They act independently, and each has its own structure and project agendas. As a result, several procedures have

appeared with regard to procurement method and project team formulation, even within the same unit. However, all forms of delivery are tender-based and have an in-house supervision team, which represents the project client and is responsible for reviewing design documents, coordinating activities with stakeholders, site supervision and issuing construction progress reports. The public operator announces a design tender to secure initial design documents. The internal supervision team then reviews these documents, coordinates with relevant stakeholders and obtains approval, so that the tender process for contractor selection can be started. In comparison, in method (B), the only difference is that the in-house project team develops a first draft of project design based on stakeholders' needs, and then the main contractor tender is designed and built (DB). Another form of procurement has also highlighted, in which case the tender documents are broken down into three main packages: design, construction management and project management. In this latter form, due to the involvement of a new party, project manager organisation (PM), authority and the major responsibilities of the internal supervision team are reduced. As shown in Figure 8.6, the internal construction project team, which supervises construction activities and deals with various stakeholders, as regards all delivery methods, includes in-house members from the different engineering departments of the public operator, e.g. architecture, civil, mechanical, electrical, special system, contract and finance. Team members' selection is based on individual experience and competence, and comprises a number of young engineers in certain projects. The supervision team is guided by an in-house project director who is at the top of its structure. The funding for O2's projects is secured by a government body, which is the airport owner.

Projects within O2 have different stakeholders: airlines, maintenance, operation, airport management, security, police, customs, immigration, private aviation, air force, government authorities, ministries, air navigation service and international airport association. The internal supervision team is responsible for ensuring that their specific requirements and needs are included in the project scope, and coordinating with them during the construction phase in terms of scope changes and additional requirement.

Project goals are developed during the design phase by the engineering department or internal supervision team before involving the main project contractor or a company that will manage the project (O2P5). However, following the selection of a construction manager and the start

of construction work, the goals might be reviewed and changed (O2P3). Goals development process involves in-house people and project stakeholders, and, in some cases, a design consultant. In this regard, most important people are the end users who are going to utilise a specific facility. O2P2 stated, “They are going to be the end users, and you do not want to have something that given to them and then oh my god, what is this.” O2P4 remarked that he had developed project goals independently according to his experience of working in the field of airport construction. For O2P9, bringing together all people associated with the project, including designer, construction manager and stakeholders, through workshop arrangements, noticeably helped the project team become familiar with the project, increased the level of understanding and reduced the time required to obtain the numerous approvals.

The vast majority of senior project managers agreed with receiving upper management support when needed during the project lifecycle. O2P8 mentioned that the progress of the work was highly supported at a high managerial level, but there remained individual support. O1P3 and O1P5 linked this type of support to a project’s vital position; they remarked “you are talking about aircraft safety related, it must be one of the first priorities for them,” and “they should provide it as soon as we ask for, as the critical status of the project. It is runways and dealing with different aircraft, any delay will have serious consequences.” In terms of power in taking decisions, it appears that O2’s senior managers have full authority. They cooperate and work closely with a project’s consultant and end users, in order to make the final decision effectively. However, major items requiring legal decisions, regulations and associated with contracts and finance need upper managerial level approval. As regards sharing success and failure, the head of the control department (O2P9) stressed that there are different types of risk. Any risk associated with construction activities is shared between external people who are actually working on a project site, e.g. main contractor and construction manager and project manager. On the other hand, the public operator/owner is responsible for risk that is related to the coordination process with stakeholders and obtaining approvals and required licenses.

Previous experiences have helped senior project managers to avoid various issues during a new airport’s master plan development process (O2P9). In relation to problem solving and issue resolution during construction activities, leaders or directors of internal supervision teams coordinate with project consultants and other stakeholders, particularly, end users, who will utilise an airport’s various facilities (O2P2). In this regard, they also support project

contractors by arranging a series of meetings throughout the project lifecycle, including the project consultant, in which they discuss project obstacles and expected problems (O2P3). A project director and a representative of each party are responsible for coordinating and arranging these kinds of activities. However, O2P7 mentioned that stakeholders were not involved in taking decisions: “you will never get their high level of satisfaction because of the numerous numbers of requirements.” The best experience of O2P4 was of team members from both internal and external people relying on themselves to solve project issues based on various sources, e.g. project standards, online and related books, and taking decisions within project scope. In other experiences team members and external parties reported problems to internal project managers and then led the situation (O2P3 and O2P5). Project managers of an in-house team, who are at the top of the project structure, are fully authorised to solve project issues, but they seek upper management help in some cases. However, O2P8 stated that various project members had a clear structure of communication for issue resolution developed at an early project stage. He emphasised the importance of teamwork and noted that “without the team members you cannot do the work, so you need a team work strategy with our team members to achieve our targets and goals.”

The following Table 9.2 shows how project managers deal with team efficiency and create confidence among team members, which ensures expected quality and high work performance.

Table 9.2: Organisation 2 Project Team Efficiency Practices

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O2P2</i>	<ul style="list-style-type: none"> - We always have communication everyday early in the morning. - Giving the confidence, and giving the respect to each other. - If you see any problem, or you see I am going to a different direction, stop me please.
<i>O2P3</i>	<ul style="list-style-type: none"> - I have developed check list following every unit or sub-project handover. - You need to be ready and aware of all standards and requirements.
<i>O2P4</i>	<ul style="list-style-type: none"> - We were working in a teamwork environment. - I was telling them that, project success is your success.
<i>O2P5</i>	<ul style="list-style-type: none"> - Should have the required skills, abilities, competence and experience. - My team should be interested and got the experience for the particular task. - All must be responsible, interested and active. - Anyone is not good in his job just replace him.
<i>O2P6</i>	<ul style="list-style-type: none"> - If you are not trained, it is very difficult to understand the system.
<i>O2P7</i>	<ul style="list-style-type: none"> - I am a flexible guy and my doors are open. - My colleagues they like to share with me my ideas and thinking, we share it

	together to make sure that I guide them to the right direction.
<i>O2P8</i>	- You have to have period to get yourself familiar with each other.
<i>O2P9</i>	- Proper and clear project. - Getting team members involve in every single detail of the project. - Aware of what is going on. - Team work environment.

10.2.3 Organisation 3 – Joint Public-Private Venture

Two new airport projects were selected by organisation 3's (O3) senior project managers as a best experience. Ninety percent of them chose the same joint-venture airport project, which was under construction, during the time that data were being collected. However, according to the project delivery procedure, the government body announced for tender to build a new airport under a form of build, transfer and operate (BTO) arrangement, after securing the master plan through a professional body, the airport projects consultant. Project funding was secured through three lenders – local banks. The winning group comprised two companies, who held equal share (50%) of the agreement, an international construction manager (CM) with wide ranging experience in developing airport projects in an international context and a local contractor. The BTO joint venture arrangement was structured over 28 years to build and operate the new airport. The government assigned a company to act as a project client and, ultimately, to be responsible for the management of the airport including airside and landside operations, while the airport remained an entity under government ownership. A design consultant, assigned by the CM, developed the project design and issued all required design documents. The CM and the contractor constructed the new airport and were responsible for the design and construction phases. However, a sister company of the CM along with the operation firm assigned by the government operated the airport following the three years of construction work. The project team design of the construction was developed through cooperation between the CM and the project contractor. The project director, deputy project director and the head of each department were selected according to individual competence and experience, but individuals in each department team were selected from both companies.

The project had various stakeholders: the owner, the board, the executive committee, the client, the lenders, the operation firm, the construction manager, the contractor, the design consultant, airlines, government ministries and other entities including police and security

authorities, passport department, customs, detectives, traffic authority and others involved in the airport. All of these people had requirements and various demands that needed to be considered in the project.

Initial project goals were developed through stakeholders who were involved during the master plan development stage. Following the selection of a design consultant, by the joint-venture team, project goals were established by the CM and then discussed, agreed on and approved by all stakeholders who had influence in the project. In addition, project stakeholders, project team departments and other individuals became aware of their role and responsibilities within the project. Following this stage, the project design was released for construction work. The mutual project goal was to complete a quality project as soon as possible within agreed budget. Indeed, most stakeholders and the various project team disciplines have different interests, e.g. the client aims to award an environmental certificate (friendly to the environment), the contractor wants to achieve the silver category of an environment-friendly scheme and gain airport construction experience, the CM wants to hand over the project early and realise additional operation benefits and the design department wants to be always one or two weeks ahead of schedule. Throughout the construction phase numerous meetings were arranged, whether involving the client, the operation firm or different project team departments, in order to track goal achievements and discuss related issues.

In terms of receiving management support, O3P1 mentioned some difficulties and obstacles, but stated that they often face these issues when working abroad as they are related to country visa conditions. Furthermore, the project owner gives the project team all the support needed for success. The project finance manager (O3P6) considers management support as the most effective in the joint-venture project. With regard to project success and crisis, these are shared between people involved in the project, particularly, the construction project team. O3P4 stated: “everybody has to start this from the beginning, we have to be like this otherwise we cannot finish the project on time.” Partners in the construction phase are also together over the operation phase of the airport, accordingly, they share everything and obtain each other’s approval when taking decisions.

The project construction team share and discuss site issues. O3P1 mentioned that strong communication lines within project context are helping them to solve problems and considers

it as a great feature of the joint-venture agreement. The project has a team called ORAT (Operational Readiness and Airport Transfer) that works and coordinates with the construction project team to solve issues regarding external stakeholders, as well as deals with all external people involved in the project. This group is also responsible for all coordination activities between the operation and construction team during the project lifecycle. In each department there is a clear structure of reporting and solving project issues, and team members know what and where to report. O1P3 stated that he encouraged his team members to solve minor problems at the project site, which did not have serious impact; otherwise, they have to follow the developed procedures. Paying attention to problems in advanced is also encouraged within a project environment. The quality assurance and control manager (O3P4) emphasised that they are always trying to do this: “otherwise we cannot finish the project on time.” O3P6 explained that in such a mega project any issue or fault may affect other milestone activities, which could seriously delay the project and increase its cost. However, the project director’s extensive experience and appropriate managerial skills have helped the project team in dealing with this matter. O3P7 stressed the importance of project strategies and procedures that are established in the early project stages and effectively delivered to team members, and in accordance with which they must behave. He responded immediately to problems and encouraged face-to-face communication with parties involved in important issues.

The following Table 9.3 illustrates how project managers deal with team efficiency and help team members become more confident, which ensures quality and high work performance.

Table 9.3: Organisation 3 Project Team Efficiency Practices

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O3P2</i>	-Following up my team. -Being aware of each team scope, roles and job duties. -This is one of important factor to be sure everything is in right order and track. -Indication of following right project track and ultimately develop team confidence.
<i>O3P3</i>	-We are talking to each other a lot ... Spending so many times talking about the project, what we have to do
<i>O3P4</i>	- Everybody when come or assign to this project have to know ... This project is a high level and needed project ... Complex projects. - Trying to choose most people that have experience in other airports’ projects ... It is not enough ... Teaching them and sharing experiences.
<i>O3P5</i>	-Successful selection of highly qualified team members.

	<ul style="list-style-type: none"> -Basic support for assuring high quality work. -The qualification and wide experience of the project CM and contractor.
<i>O3P6</i>	<ul style="list-style-type: none"> -I believe in people investment. -I concentrate on the weaknesses he has ... I try to enhance and solve individual weaknesses. -I teach them my experience. -I arrange seminars. -Make him good enough in that by explanation, teaching, instruction and examples. -I implement test practices. -I do arrange training sessions and try my best to develop my team.
<i>O3P7</i>	<ul style="list-style-type: none"> -I really respect them, I trust them. -I never argue with them as I want them to improve themselves. -I help them and let them understand how they develop. -My team can speak comfortably with each other without stress or pressure. -All this is very important in team environment.
<i>O3P8</i>	<ul style="list-style-type: none"> -I do not put many pressures on my team. -I do not blame them for every minor mistake. -I defend and support my team when they make mistakes. -I take full responsibility towards top management unless they are careless. -I am always encouraging and supporting them, they feel comfortable to work. -You have to know your team.

Another good project experience selected by a participant was a joint-venture agreement between a government body and two companies, an international main contractor and a local sub-contractor, to build a new airport in the build and transfer (BT) form. The project was also tender-based, but shares were not equally divided. The main contractor (CM) held 86% and the sub-contractor 14%, and it was financed by a single bank. As shown in Figure 8.9, the government body assigned a company to be the project client and another two organisations, a design consultant and project manager (PM) to be under government ownership. The PM organisation was responsible for managing the entire construction process of the project. The main contractor was in charge of construction works and all associated processes, while the other partner, sub-contractor, dealt with external works and coordinations. The construction project team mainly comprised individuals working for the main contractor.

11. Appendix K

Interviews Data Description and Interpretation: Theme B

Appendix – K

11.1 Theme B: Project Team Strategy - Data Description

Context			
Organization 1: Private Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P1</i>	<i>Senior construction project manager – programme manager</i>	<i>Refurbishment of Terminal Departure Lounge</i>	<i>01:28:46</i>
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>“We follow project management association standards ... We have business cases and briefs ... We have overall goals for the project so we know what we need to do ... Why we are doing it ... What we expect the measurable to be at the end ... What we expect the measurable outcomes to be at the end and how we are going about it in defining the projects and the cycle that going through ... We set that path and we are engaging specialist team members ... Rule quite clear about who is responsible for certain deliverables ... It is very much a collaborative collective team, a virtual team, specialists.”</p> <p>““We have certain measures, which we routinely measure our performance in the operation, so there is ASQ (Accurate Service Quality), it is an independent assessment and use to measure compare performance across the airports ... The other one called QSM (Quality Service Measurements), both of them involve into passengers, so they do a questionnaire, the QSM one is organized by (..) the private operator and funded ... The ASQ one is organized by an independent body ... We look at the easures at the beginning of the project and then we look at them at the end of the project, so we can see the tangible benefits ... We do a benefit study where we identify what the outcome is, the strategic level and taking a step back on how we hopes deliver that, what the measures are and then we produce a benefit map that relate all the outcomes’ measurements back to that strategic aim.”</p>			
Sub-theme: Team Trust (TT)			
<p>“We have a standard structure in terms of documentation and forms ... A month end process where we have dashboard ...Various project management indexes, trends in terms of schedules, cost, quality, logistic reports etc. ... We share that information ... We collaborate in that respect of communicating with suppliers on contract management ... This is through weekly reviews (face to face) ... Also there is reporting structure in place for that ... So that with project sponsors and other key people so we communicate.”</p> <p>“There is also monthly stakeholders programme board, this with terminals and key stakeholders ... Give them a monthly update of progress on site and any issues ... We seek endorsement for decisions when a decision has to be made ... We have a monthly programme level sponsor group ... All the key internal, decision makers, finance directors, programme leader, all the key directors, procurement directors, operation directors ... If you need a decision you have to go to them to seek endorsement for that decision, so that they are internal governance.”</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>“Everybody is working towards the project goals ... Those goals are aligned ... The project as whole was very successful, it has delivered ahead of time, significantly under budget, provided a solution which was innovative and claimed, attracted a lot of attention ... All of the success factors were very positive and as a result each individual party was very successful.”</p>			
Sub-theme: Team Interdependency (TI)			

“Everybody worked together, myself and the other key project management persons ... Project managers underneath me and my programme leader above me and project sponsors, and ultimate project delivery directors within the organization to maintain the level of motivation and team spirit.”

Sub-theme: Team Enthusiasm (TE)

“It is up to me to then share with the individuals and the project managers, in this case actually was not (..) the in-house employees, but it was a huge impact on annual performance review as it was the project manager being the contractor, got recognition and he has been rewarded in that sense, he continue some employment, I passed my congratulation to them, they have one industry.”

“In terms of managing the contractor for that is yes there is ... It was NEC3 option C contract, which a target price contract with pain and gain ... If the contractor was able to deliver under the target value, then they take a share of the gain ... If they fail and deliver above then they take a share of the pain. It was delivered under budget ... so that for the good performance, one more work.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P2</i>	<i>Senior Construction Project Manager - Portfolio Manager of Asset Replacement & Commercial Capital</i>	<i>Minor Construction Works Programme: Office Buildings, Roads Networks – Escalators</i>	<i>00:52:45</i>

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

“The key strategy to getting people to work together is to understand what is your common goals are ... You need to understand how do the various parties succeed and fail ... It going to be interest areas and going to be contractual and you just need to manage it that way ... Actually it is about establishing what the common goals are.”

Sub-theme: Team Trust (TT)

“It is down to your personal relationship ... It is the key relationship that you have ... Your personal relationships allow you to have that conversation and still have all work and relationship that you can afford.”

“All of the information is shared ... Among common goals ... I do not share all of my commercial information with my contractors ... I will share with them where we are working together to solve problems ... Actually I show them what are my challenges are, what my issues are and vice versa.”

Sub-theme: Team Cohesiveness (TC)

“Because we have long term relationship ... We had to focus on the attitude as well ... If you just focus on the project goals you would be too narrowed and actually will be massive overlap between that project and that project and that project.”

“We were structured to reflect our client organizations to simplify the communication from the client to us and then until the contractor.”

“I do not run the terminals, but I am doing works that enable them to run the terminals.”

“We are the client and their interests same as my interests ... I do not have the knowledge or the expertise around their business ... There is a bit of time you do see yourself separate from the client because their expectations ... Operational interesting in managing passengers through that space and get the best services ... They understand there is a need to develop projects.”

Sub-theme: Team Interdependency (TI)

“It is a matrix organization ... Whoever is looking after the landside would know all of the projects that are happening on the landside areas ... Somebody who is looking from airside is likewise ... Only where those business units interfaced when you have a project across multiple

business units ... They be working in the team ... They will talk to one another.”			
Sub-theme: Team Enthusiasm (TE)			
<p>“The strategy is about being clear about what we have to do ... About our current performance ... What need to change to achieve that level of performance ... It is about a clarity of message ... I’ve given them the plan and supported them in terms of getting how to get there ... I give them the details they can work with ... I give them the plan ... Your commitments, where all we do heading, are we on plan.</p> <p>“Any project success is we had, we communicate it up through the capital director report ... We do a monthly report to the board and we always make sure that we have a contribution from our team on that board talking about success ... We make sure the individuals are recognized too.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P3	Senior Project Manager in Direct Support of Strategic Initiative – Pre-construction Activities	Strategic Construction Projects Perspective	01:25:56
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>“Think I am going to be repeating myself a lot here, I have a regular project team sessions ... I encourage open and honest conversations, I do not dwell on issues ... I encourage conversation around the table, be honest how we move things on from here ... What can we learn from that past issue ... Making sure that we are working in a way that is cross functional and integrated ... Making sure that people are often talking to the right people about what they are doing ... Making sure that at the very early stages that the broadest scope of people are involved ... Consistently, questioning, testing, challenging to make sure that we are doing things in a way that is joint up in efficient.”</p>			
Sub-theme: Team Trust (TT)			
<p>“That is all open and honest conversation ... How I want things to work ... No hidden agendas, no sort of side bar conversations ... If you deal with things in a way that is just practical, straight forward, open and honest and then encourage people to earn those sorts of conversations ... Then also making sure that we have got the right product in places ... So, actions, issues, risks, register and all the stuff that allow us to track and capture those things and then make sure that been dealt with and the people or taking ownership of sort them out.”</p> <p>“Everybody has a clear rule to play and I encourage them to do their rules probably ... They are not doing something that either replicating or overlapping or in isolation.”</p>			
Sub-theme: Team Cohesiveness (TC)			
Sub-theme: Team Interdependency (TI)			
<p>“They should be doing that in a way that is more efficient and more integrated with everyone else ... If you have a dialogue in a room then everyone can probably understand what all the other members of the team are doing and how they all contribute to the project.”</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>“I would say celebrating success not so much ... Most of my project experiences is pre-construction ... Have we got the business case, what is the right design solution here or not even the design solutions but what is the right solution strategy first ... If there is capital investment needed ... You have got to the point where you achieved your check points or Milestones ... That is the right time to say thank you to the last stage before you move on to the next one ... We do more formal celebration of success at end where something actually been delivered.</p> <p>“This is just my skill is more suited to the early stages of the project and so because a lot of our projects are quite lengthy ... And I am quite happy to hand it over to somebody, because it is</p>			

again there are lots of people in this organization who are much more better getting something through physical delivery stage than I ever will be ... I think in terms of where you can apply your strength ... Then I am quite happy for someone to take the project on, and actually be on site with the contractor doing the delivery."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P4	Senior project Manager - The capacity Optimisation Programmes, Airfield team	Airside Physical Facilities – Dealing with Snow in Winter Condition	01:19:40

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

"I think the strategy is as I described early, I am trying to be quite collaborative and inclusive ... I find it much more productive to have a workshop style project team meetings where I allow the ideas, so rather I say to my cost manager you need to develop cost plan in the next 5 days to achieve several goals, I will sort of say this is what we want to achieve."

"Success of the project is very much on time scale ... Cost and everything else is a constrain as well but people want to know how we going to finish on time ... That has been the nature of workshops and developing ideas ... What do we need to do in order to achieve that and having that environment working."

Sub-theme: Team Trust (TT)

"My project team may recognize that they are making quite big decisions or contributing towards big decisions on behalf of the project, and I think giving them that recognition makes a different for them as well."

Sub-theme: Team Cohesiveness (TC)

"I know if I ask them to do something in a short time line they will be working to the evening and I do not want them to do that unless they really feel they want to do it ... Because otherwise it is quite severe."

Sub-theme: Team Interdependency (TI)

Sub-theme: Team Enthusiasm (TE)

"We have, certainly when we clear a gateway on January ... We got really good feedback from people about the quality of our governance paper work, very refreshing and no mistake on it ... I sent all of that straight on to the project team and let them know that we are getting good feedback and at the end of that phase I sent an email saying 'guys good job that was a good effort'."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P5	Senior Project Manager – Fast Development Projects	Separate Temporary Terminal	01:13:47

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

"We had different people from different areas ... We only had one contract for the delivery of the building with (..) the contractor and his subcontracted to the builders and that I think was good thing to do ... Everything was through (..) the contractor which worked well ... And we built up a very good relationship with (..) the contractor project team."

"What need to be accomplished was clear to all parties, it was very open."

Sub-theme: Team Trust (TT)

"Probably it was difficult initially ... Because we were trying to set the project up and develop the scope before we got (..) the contractor on board ... At the same time we were had a lot of

early meetings with suppliers of buildings ... We could not talk to (..) the contractor until we have got them into contract ... Once we got their team in place and through just working very closely with them they came on board and obviously helped us very much in the build process.”
 “I think there were a lot of trust, it was probably difficult when we getting into contract, because it was lots of financial discussions about how much we are going to pay them and if we have a fixed budget ... I think most of the other people wanted to get involve, people wanted to help, is the right thing to do ... Generally the level of trust and cooperation was really good

Sub-theme: Team Cohesiveness (TC)

Sub-theme: Team Interdependency (TI)

“No everyone was coordinated and that coordination really was through everything of sort come back to me ... I was sort of pulling the strengths for other people to do things but it all came back to me ... I can keep it coordinated, views of where we were in each areas.”

Sub-theme: Team Enthusiasm (TE)

“Yes I think, it had to be, as if you did not believe you can do it then we would not done it ... You have to almost going to it with a really positive outlook, you know, ‘we going to do this, we cannot fail’.”

“We did not set together necessarily on a daily basis ... We had weekly meetings with (..) the contractor, and the weekly working group as well ... There were probably 4 or 5 different meetings every week as we went forward and it generated to get quite close team really.”

“we had several ways really, there was a very strong team ethics generally ... At the end of the project we had 2 or 3 events inside the (..) The terminal before it was used ... We did a topping out ceremony towards the end and we brought a lot of our senior management in to view the project and then (..) the contractor senior management ... That was a little bit of a congratulated event ... We had the undersecretary of state ... We involve (..) the contractor in that, so (..) the contractor handed the keys to me and I handed the keys to our operation team and it was televised ... We had a post project celebration ... We went out for the day, (..) main contractor team and our team ... That was good really.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P6	Senior Construction Project Manager	Refurbish an Old Domestic Lounge	01:05:16

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

“Following what we were taking about earlier ... You have team building workshops, team building events to actually get people know each other ... What they do and what they bring ... Get their likes and do not likes ... Getting them involve in the project, get them involve and be part of the team, a naturally important ... I think if you do not do that you will struggle.”

“You precisely say ‘these are the objectives, this what it brings to client’ ... Then saying that “these are the objective, where do you fi in those objectives, what is your objective and whether it deliver those objective’ ... Try to get people voting completely and get all work at the same direction ... We got a sort of understanding what the end look like ... What people bringing to it.”

Sub-theme: Team Trust (TT)

“As we get to know each other trust developed and if there an issue resolved we will be open on it.”

“Some of the commercial information was not shared ... Some people would not know what the cost estimate was of the project ... Sensitive information we could not share that ... We share other information like schedule, quality targets, objectives and some of the stakeholders’ requirements ... Get out of the stakeholders what will be successful for them.”

“Stakeholders were able to input into the project, in defining the requirements, mainly about requirement to be honest ... At the end what their expectations are ... Stakeholders are

important and you have to keep them on board ... Making them feel on top of the solution.”			
Sub-theme: Team Cohesiveness (TC)			
“Probably not directly, most of the issues prevent the project from delivering against time scale, it may prevent project from reaching the cost and maybe quality issues ... So, things that could delay the project mostly or taking it off track and it could be different type of issues really.”			
Sub-theme: Team Interdependency (TI)			
“This is through workshops ... We had a plan for the day ... We have a structured day that we went through with objectives ... Everyone was at the same place ... We went to a hotel, so got everyone out of their office environment, where I think sometimes you feel social when are there ... We are trying to do is general again about team working ... The client and project management team are based on the same office, the contractor based on the same office, so any meeting we had we had it in that office ... It a very open plan field, where you can just get out and talk to someone if there is an issue.”			
Sub-theme: Team Enthusiasm (TE)			
“It was driven by me really ... If someone would say ‘we cannot do that’ I will say ‘why, why you cannot do that!’ and get them thinking yes we can ... I think it is the leadership elements of a project manager makes it work. “When we delivered the project we celebrated it ... It was a social event ... Some of our projects we set targets for contractor and give them bonuses when they deliver or deliver earlier.” “I think yes project environment made differences in team environment comparing with other project ... I think sometime doing the other fragmented project team affect the communication.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P7	Senior Project Manager – Capital Construction projects	Airside Segregation Project	01:05:57
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
“The strategy I adopted was to have clarity really ... What the purpose of the project was, what the constrains of the project were ... What the rules and the responsibilities were ... Make sure that there were appropriate forms where people did come together ... I was aware of any issues that came out of that ... These are the targets which will be the project objectives.”			
Sub-theme: Team Trust (TT)			
“I think a lot of the trust in construction comes once having a common goal ... And I think you got to play fare with contractors.” “We have a system set up ... We had a person that would distribute information and that actually is great important ... You can put as many IT system as possible ... We all collocated, I was in the same office, I was with the managers for each of the suppliers.” “All members had an input and were able to make decisions.”			
Sub-theme: Team Cohesiveness (TC)			
“We had the main target of the project or number of target ... When rolled it down to the rules and responsibilities and the actions that you need it by various people then it became or maybe individual targets for them.”			
Sub-theme: Team Interdependency (TI)			
“The management contractor would coordinate the activities and then my rule as a project manager would be to make sure that was happening correctly ... Make sure that we still retuned our objectives, change from the business ... Make sure that they will reflected into the process.”			
Sub-theme: Team Enthusiasm (TE)			
“Actually it was recognize by the whole team.”			
Context			
Participant	Position Title	Best Project Experience	Interview

Name		Chosen	Length
01P8	Senior Construction Project manager – Leader of project Managers & Project Engineers within Airport Runways Projects	Airfield Pavement Projects (Runway and Taxiway Refurbishments and Reconfiguration)	01:16:36
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>“Very difficult very challenging project ... Now we are not in a collaborative partnering environment in this particular project, so we are quite clearly the client with carry out the design work we have given a tender to contractors to bid, so it is not in a collaborative approach ... Much more a traditional contracting with also a cost manager in there ... We got to structure to put everyone together ... So we got the contractors ... We got all our stakeholders ... We got project teams ... We explain to them what we are doing and where we were with the project process ... So all the different stakeholders could see what happened, what we are aiming to build, where we were in the process and then to encourage them to give feedback.”</p> <p>“You then come down to the actual project team delivering the works ... We met for couple of days and also facilitated team building events and everything, that was quite good ... Get everyone to know everybody and obviously the aim was how do we deal with the aims and meet them to flush out how we going to work together when we have problems ... Because it is always going to be a problem ... We did all of that to try get everybody to understand everybody else positions and get to know people and deliver the project.</p> <p>“Actually no ... Well the cost is tenders of the works so they are giving the price ... A lot of people do not need to know about it ... We just look at the main contractor and his course ... The stakeholders do not need to know these stuff.”</p>			
Sub-theme: Team Trust (TT)			
<p>“The trust only happens through doing what you say you going to do ... I always say to the contractor if I said I am going to do something I will do it ... That takes time to get that sort of trust, you cannot just have a meeting and say we trust everybody, it has to be through deliverables ... Losing a bit of trust of the contractor because he is not doing some of the thing he is saying, so we have not got massive amount of trust.”</p> <p>“In this case you can only go down to the contractual root and hold it to account ... We having a regular meetings with the contractor and some of the key subcontractors with all the directors every week ... We continue telling them that you are not delivering items and we are not happy with you, you do not satisfy our needs, you destructed the way that work on the airfield.”</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>“There is a programme and we have some key dates within the programme ... They have to work ... How they sequence to get to that point it is pretty much up to them ... But do we keep an eye on them.”</p>			
Sub-theme: Team Interdependency (TI)			
<p>“We regularly meet with all the different parties and we do try to meet everyone together ... We have a weekly meeting with the key stakeholders, the operations ... Just keep talking, keep communication lines going.”</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>“Like if there are some problems I will come up with some brainstorming ... Some ideas and then deliver stuff myself which then encourages them to do it ... It is not good me just banging the table and say you must do this stuff ... Self-production, not just making orders.”</p> <p>“The question is how you define success ... If it just purely that we get the job done which we will get it done ... But actually the way that we have got it has not been successful.”</p> <p>“The nature of work is incredibly complicated and complex on what you are trying to do ... In (..) an airport has another 60% of complexity on top of normal construction stuff.”</p> <p>“You measure it by how you manage problems ... I spent a lot of my time talking to our directors,</p>			

make presentations and explain to them what we are doing in dealing with the problems on site ... They get confidence on that ... If there is problems in the project and not been dealt by me or others and the project get worse and worse, then that is not a good thing.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P9	Senior Construction Project Manager – (leader of Project Managers (Security and Saving Operational Cost)	Terminals Security Project: Security Equipment in the Passenger Security Areas	01:43:20

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

“I explained the team structure in terms of me in the middle and the construction company in one side and the cost, risk and support services in the other.”

“In terms of making sure that the team performs effectively while working together ... There are few key things that have worked well ... Regular contact, these two not necessary meet directly ... There is a regular weakly progress meeting ... With the construction company, with the architect, with the terminal operation’s team who are my client ... There is a whole different level of clients’ structure ... The construction company their client is me ... I am delivering for the terminal ... I believe in transparent nature, the majority, not all, of the information are shared between us.”

“Because of the nature of the environment ... Any construction environment can be dangerous but some are more risky than others and the airport environment can be a disaster if things go wrong ... Everyone knows what is expected from them.”

Sub-theme: Team Trust (TT)

Sub-theme: Team Cohesiveness (TC)

Sub-theme: Team Interdependency (TI)

“Those progress meetings, the key to it is getting them set up from the start and the key is from my perspective is getting people to attend them and the key to that I think is emphasizing the passion and the importance of the project and the importance of collaboration ... You do need all the right people at the table in one place sometime to share everything ... Getting them perform effectively is largely around communication and the drive to get people to come to these weekly progress meetings, taking effective minutes, issuing them in a timely manner ... People have a chance to action what they have asked to action.”

Sub-theme: Team Enthusiasm (TE)

“Yes defiantly you have got to ... If you go with anything rather ‘we can do approach’ you have lost half the battle ... That comes back to what I have saying before the drive in these meetings, if you do not believe yourself that you can do it nobody else is going to believe it ... I think it is motivated team which is great ... The motivation comes from effectively me being a ‘can do’ type of person and instilling that can do attitude in everyone else in the team.”

“I do out them in pressure sometimes, which the firm preferred.”

“I sometimes think that in (..) this airport, in general, there is not enough recognition sometimes for people that going extra mile because it becomes expected ... The place where I recognize people for putting good work is in those weekly meetings ... It is probably my comments saying ‘thanks etc’.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P10	Senior Construction Project	Totally New Terminal	02:24:06

	<i>Manager – Programme Director of Terminals Projects</i>		
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>“Goals at the highest level, and then objectives ... CPI (Cost Performance Index) greater than 1, safety AFR (Accident Frequency Rate) 0.04 and below that, SPI (Schedule Performance Index) less than 1, FAA (Fire Alarm Activations) and also quality Scores greater than 95%.”</p> <p>“I have a dashboard which have to talk trough every month in my major project review ... It is a very tough session ... I am driven by performance of hitting a number and hitting a date, which is right for me as a job I suppose to get it right and hit the numbers ... So, to hit the numbers the pressures on me, I make sure that that numbers hit ... Safety is something I spread, so every meeting I start talk with safety ... Safety is number one for a reason, and we have the safety matrix that is why we have done well ... You are able to achieve the impossible through the leadership at time, creating that environment ... They have got the objectives specific, their end of year performance ... Their bounce gets paid on them hitting their objectives ... At the start of the year I do objectives meeting for the year ... Then I ask everybody to follow those objectives ... Contractors and my whole staff all got the same and then they have to fill it out ... Then one to one with me and I talk through it in specific.”</p>			
Sub-theme: Team Trust (TT)			
<p>“I got little contractors in ... When I say contractor like you working for me but you working for another company ... But you have been one of my project managers ... When I comes out to trust, if I said ‘is there a trust in the team, is it a happy team’ ‘yes’, but do they think I share everything with them ‘this no’ ... I have a weekly meetings ... I tell them which comes out from the executive and what is happing in the passengers’ numbers ... What is going on the programme, safety, and what is happing in the other areas, take the learning on, that is happened in (..) the previous project ... Could you make sure that lift incident does not happen here ... But I cannot tell them commercial ... There are different things ... So I have got a strategic level which is major programme reviews, the data, the dashboard, speaking to senior staff, big directors and staff ... Then there is this (me) and then there is my team ... I suppose you can look there are 3 levels.”</p>			
Sub-theme: Team Cohesiveness (TC)			
Sub-theme: Team Interdependency (TI)			
<p>“Different things different times ... I bring all that team that works ... That gone through a crescendo and it start from the start and put the learning in and all the problems ... But that is also not good for the organization ... Because (..) the airport like a city you have got to spread learning So, I think there is a mixture there ... But the teams I think it is good to have different dynamics, because it is different learning, makes me better being with different people as well.”</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>I think doing the right thing is quite interesting first ... I think it is really important how you behave ... I was out with my CEO and picking up letters ... By the end of that visit and the following visit he is doing the same ... But why would my CEO pick up letters on my site ... I am proud of my site and he wants to be proud of my site ... It is about behaviors ... How I behave and how I am seen to behave.”</p> <p>“Achievement recognition is so important ... We do awards internally ... We star awards ... We can nominate somebody and get a little star ... We have star of the month and things like that ... We have apple best thing, which is from 1974, this teddy bear called Harry ... When somebody has done something good they get a photo with the bear ... If I see good on site, because safety is all about, actually, where is your gloves, where is your hat, fine I tell you again and you are off</p>			

site ... I have got these tokens with the picture of aircraft on ... You get free breakfast with them ... If you are doing a great job 'well done mate' ... That sort of care for people ... These sorts of things are leadership ... Team recognize good things as well.

"Team also ... We have got team awards ... For (..) the contractor every month we have safety awards ... I have got this book called Dragons Den, whereby we all set one side of thing ... People come with ideas of how we can save money ... How we can be safer ... How we can save time ... We have great ideas from this, and people seen things out side of the business ... What we do we give them awards at the end of it ... They go into the book and they get put on a board that was come up with a great idea ... It is something that has driven the industry as well ... They are all put in one sheet for each of these as a photo of a guy or girl and what the idea is, and that recognition as well, so recognition for goods ... There are safety awards at site, there are good ideas on site ... There are processes in place for all these stuff ... Basically if somebody has done a good job, I just send him a text 'well done' or thank them."

Context			
Organization 2: Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P1</i>	<i>Deputy Construction Project Director/Project Control Manager</i>	<i>Totally New Airport</i>	<i>01:35:30</i>
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
Sub-theme: Team Trust (TT)			
Sub-theme: Team Cohesiveness (TC)			
Sub-theme: Team Interdependency (TI)			
Sub-theme: Team Enthusiasm (TE)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P2</i>	<i>Head of structural engineering department</i>	<i>Private Aviation Terminal Project</i>	<i>01:21:25</i>
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>"One of the major strategy I have it for the ... Their qualification and experience ... It does not mean that everybody is qualified or everybody have so many years of experience ... We have our young engineers who want to learn from us and to pick up everything that they can ... I do have the experience to understand what type of equipment that necessary required, other systems, and all those sort of things ... Anyone should have it being in that position, if you do not have it then you are lost and then your younger engineers and other colleague may be thinking that 'you are not having that much experience on what I am talking about' ... They are my right and left hands, they are helping me out ... There are several hard discussions we come across and we argue, but the final solution is that the project that has to be done ... Once the doors are open to my all friends and colleagues, they feel much more comfortable and just walk in and start</p>			

talking and discuss ... It is a teamwork environment and you cannot achieve success without it.”
 ““This is very important actually ... We want to make sure so we set together, review together and we see all these kind of critical path and everything insure the work can be done in this period of time ... We have been giving time to get the job done, and we have to follow these things in sequence.”

“Our staff is number one and once we decided what has to be discussed with the contractor we call the contractor to get in ... We call the top management ... To see this is what we are looking, this what we have in our construction activities ... Once we discuss with the contractor, we design some criteria, some schedule that we have to meet it.”

“once the design is completed and everything but yet we prefer we have him (the designer) on board in a sense that there are lots of things which may be needed to follow it up and get the job done.”

Sub-theme: Team Trust (TT)

“This is basically the beauty of the whole things ... Our aim is to ensure that we have the job in such a systematic manner, we should not have any problem ... Sometimes it hard to manage colleagues, but at the same time fully respect them and we told them let us set together, let us work it out, what is the possibility, what is the possible solutions we can resolve it ... And once we have that, we will move forward, this is ok and that is great.”

“We have all information about the project from day one, we have the design criteria, the specifications, we have bill of quantity ... If they do not have adequate function we seek help from our top management ... We are working together in one project, and that went very well.”

“They work it out very well in the sense yes they can capture some types ... Maybe early time they may not be able to ... I am giving them freedom to do that, this developing their own confidence.”

Sub-theme: Team Cohesiveness (TC)

“Not really competition, I do not think so.”

Sub-theme: Team Interdependency (TI)

“Yes that is the way we do it every morning, it is one hour ... All team members set together and if we have some problems or issues we solve it ... This is not the regular meeting it is something extra.”

Sub-theme: Team Enthusiasm (TE)

“My boss been watching us and looking to our abilities and capabilities to get the job done ... Having this much experience in the past ... They do realize this person might have the capability to get the job done ... I do not have to tell them, but they do realize from all sort of activities, jobs, design, construction activities ... And that has developed the confidence in my top management to make sure ok this is the person who can do the best ... The well management practice the more it can develop the can do approach.”

“Yes they do ... But appreciation is there and they respect you and they have confidence on you ... They ask you and seek help ... To get ideas and recommendations ... The general director of the airport sometimes called me and say ‘we have sort of problems, could you resolve it’ and I do it ... Responsibilities are expected, provided and I have already should be giving to them ... Without authority responsibility will not help you.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P3	Senior Project Manager - Leader of Project Managers & Engineers (Civil, Structural & Savement).	Runways Development of a New Airport - Airfield Projects	01:18:19

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

<p>"We developed the project cost and got the approval earlier, we have also set project timeframe ... The project schedule was not clear enough from the early stages ... Issues have appeared early along with additional requirements of users, at the same time we were not in a good condition.</p> <p>"we were very flexible ... We did not take any decision regarding time extension unless we receive an approval from CFO/president."</p>			
Sub-theme: Team Trust (TT)			
<p>"Project information was not shared to everyone ... I mean heads of department were aware of everything ... I may not send that to their staff ... They may decide whether they send it to people below him or not."</p> <p>"Yes sure ... We had been always trying to develop e.g., any completed design and ask people, get their requirements, ideas and recommendations ... Actually we considered all requests and requirements but we did not take any decision without carefully studying and analyzing it."</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>"Most of the projects' tools and equipment gone through confirmation tests abroad, in factories ... A group from our project team attend those tests.</p>			
Sub-theme: Team Interdependency (TI)			
<p>"One of the project requirements for the contractor is to set up an independent lap on site with technician people of external company under (..) the public operator supervision, so our engineer check every single test prior to proceed tasks."</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>"You need to have expert people in that field with the required competences and skills ... We tried to gather all these types of people ... Who are appropriate to this kind of project, whether engineers, legal and contract advisors, administrators ... We formed a good team initially, then we started and relied on previous reports and studies."</p> <p>"Actually it supposed to be, but unfortunately no ... We had a promise from previous (..) the public operator president, but so far nothing happen ... It was actually one of the important incentives for us in accomplishing this project as a team and any other project."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P4	General Director of Engineering Affairs - Domestic Airports	Airfield Development Project – Domestic Airport	01:14:21
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>"All that were clear from the begging, our main objective was to complete the project and achieving the best of our specifications ... We were so closely working with (..) local Airline, which was one of major stakeholders, as the changes in flight schedules was so important factor during that."</p>			
Sub-theme: Team Trust (TT)			
<p>"We had emails at that time but not really adopted ... Just between the consultant and contractor ... I have weekly meetings from 3 to 5 hours and the information was in hand of everyone."</p> <p>"I had an architect engineer ... Gave him authority and he was so happy and that really developed his confidence ... He was responsible for materials and color selections, and came to me at the end of the day to be approved."</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>"Cooperation was there, everyone was using 'we' instead of I, we consider us, all parties as a one team."</p>			
Sub-theme: Team Interdependency (TI)			
<p>"(..) my architect engineer had to visit the site with an architect from both the contractor and</p>			

the consultant side as well ... Same thing happened also with mechanical and electrical people.”
 “when I came back I found the project status is messy and project management not in a good condition, I realized later on that was of him being acting as the boss and adopting the ‘I’ instead of ‘we’ ... He got off the project team after that.”

Sub-theme: Team Enthusiasm (TE)

“They had thanks letter from my side as a project manager ... Unfortunately, within this organization we have not got these types of things, I mean officially ... They do not realize the benefit of that ... I made several letters not just for my team, was for the consultant and the contractor too.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P5	Senior Engineering Project Manager - Domestic Airports	Development of Seven Runways	01:28:10

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

“Everybody involve in the project should be aware of it, because of the project type along with it is a public project so standards should be high ... This is especially when you are talking about airport construction ... Individuals working in an airport should be aware of those standards and specification, especially working in runways.”

“Time was clear from the beginning ... The cost estimation was based on that time ... Every party aware of the time period, items and prices ... You need to apply safety list issued by safety and security department, we are trying now to apply penalty to anyone who does not follow safety requirements in any aspect.”

Sub-theme: Team Trust (TT)

“Everybody should aware, contractor, consultant and my project team ... I cannot hide anything as it may lead to instability and different sorts of problems ... If you want a good job, quality, environment you need to spread all information ... I need to get also all information form people off the project environment, e.g., operation, custom, airport manager and so on ... They have to be aware of the project and get involve before you start the project.”

“We had a really cooperative environment.”

Sub-theme: Team Cohesiveness (TC)

“Definitely we ... It does not work, and even somehow this is with the contractor and the consultant as well ... We are going to share project success or failure.

Sub-theme: Team Interdependency (TI)

“In a regular basis we visited project site all parties together, my team, contractor and consultant.”

“We designed and developed our entire plan by doing that, how you going to do this and how I stop this.”

Sub-theme: Team Enthusiasm (TE)

“It is about confidence, as long as I have good project team, contractor and consultant ... It really a challenge and you need to believe that you are capable for it.”

“Actually no, the whole team become happy after any achievement ... We had some gathering when accomplished any milestones, dinner, lunch or any, this is to encourage people for following tasks ... I really care about appreciation in such cases, so it has to be all of them, as I am looking always for better performance.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P6	Senior Project Manager – Communication & Control	Totally New Airport Information Communication	01:10:45

	<i>Systems</i>	<i>Technology of the New Airport</i>	
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>"We have (..) the designer who have experience in civil aviation and air navigation services, we have our (..) in-house navigation services and I have my team ... I presented to them the primary design and concept and so on, everybody was familiar with the approach and these things ... Stakeholders in each team are familiar with what we are presenting."</p> <p>"We have other interfaces and serious problems, as (..) the contractor company supposed to do under the central runway a tunnel, which impacted us as they supposed to finish in 18 months but now 3 and half years and it is still have not finished yet ... We still cannot use the airport because they have not finished their works."</p> <p>"Basically it is miss management, from (..)the project manager where they underestimating the timeframe and the cost as well ... Now a lot of works have been subcontracted to another contractor with additional cost ... At the initiation stage everything was clear, but during the construction they asked for delay and then delay has extended and until now they have not finished."</p>			
Sub-theme: Team Trust (TT)			
<p>"Obsoletely yes, project information were shared 100%."</p> <p>"Yes, because they are the end users ... They have the full right and whatever their requirements, because it is not their baby and not my baby ... Whatever the requirement is it is not from them or us, it comply with a particular standards which is defined by the international civil aviation organization or FAA ... We need to meet those requirements ... In the event of any conflict it is their decision, unless it is not with the international rules ... All of that was very clear from the beginning."</p>			
Sub-theme: Team Cohesiveness (TC)			
Sub-theme: Team Interdependency (TI)			
<p>"When we go to the site to install the lighting or the isles system, so all the stakeholders are there, we go and visit the site and we see that everything is functional ... Actually it cemented our trust between us."</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>"Understanding the (..) the local culture and mind set, and how people approach to develop the trust and actually this help me to reach goals ... The main key actually is understanding people and develops working relations."</p> <p>"Yes we had ... When we handed over the first runway, I have received a certification or an award from (..) the public operator saying that I have got the second best performance ... We had a ceremony organized by the contractor; it was a cooperation between (..) the public operator and the contractor."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P7</i>	<i>Senior Project Manager - Deputy Project Director – New Airport Airfield Development Project</i>	<i>Totally New Airport – Planning and Construction</i>	<i>01:10:42</i>
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>"We looked for people who can really help us to achieve what we want ... We started hunting, but those people if they are not successful with us we got rid of them, and we kept the people who adapted to each other and made this strategy."</p>			

"We keep the budget away from either consultant or contractor ... We do our cost estimate, and we share with them only how we want to schedule the different activities with the contractor and the consultant ... They give us feedback."

Sub-theme: Team Trust (TT)

"Sometimes having too much trust would be a problem ... There is some area we cannot really disclose information, especially financially and when it comes to budget, funds and giving information that can rowing the project ... But trust between our team is highly open, but with the external people is no way."

"It depends on the level, they can share their opinions and if you accept that, then their opinions can be translated into decision making later on ... It is type of a hierarchal structure."

Sub-theme: Team Cohesiveness (TC)

"no it is only by cooperation."

Sub-theme: Team Interdependency (TI)

"I mean somebody gives an idea and then we share it as an active idea ... We work together and support each other."

Sub-theme: Team Enthusiasm (TE)

"I am always positive and do not like to feel pessimistic."

"Yes sometimes when we have colleagues or engineers from other disciplines and they spend sometimes with us and they were successful at the time and have to go now, differently we have to share with them their well performance."

"Just under our team or division ... We share other department success and it is something else ... But if you are referring to if somebody a successful level in the project definitely we have to reward him."

"We give him a certificate, we do some celebration events as well."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P8	Senior Project Manager – Head of Civil Department	Totally New Airport - Airfield Facilities Upgrade Project	00:52:10

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

"From the very begging of the project, one of the major stakeholders is the user of the airport and ... We had to involve them and I think in some stages we had some foreign airlines involve in also."

"It was to finish the project on time, meeting the standards and specifications of the design."

Sub-theme: Team Trust (TT)

"There is a trust building in the beginning, even when you hire someone, at the beginning you do not know his capabilities, but once you develop the trust then you let him perform you keep check from time to time."

"We were limited to our discipline, if it had anything to do with civil works, you know, we would be given the information ... But the information was given to the upper management and then they will take the final decision ... Because we are the owner/responsible of the discipline, you own the decision that has made."

Sub-theme: Team Cohesiveness (TC)

"It is always a teamwork strategy ... the team who make it a success, whereas one guy who is going to screw it up ... it is a team effort and without team you cannot say I did it, it is always has to be we did it."

"It was very cooperative, because sometimes one person cannot move without the other, cooperation is hundred percent required."

Sub-theme: Team Interdependency (TI)

"No during the project we used to have weekly meetings, progress meetings, then on a regular

basis each discipline would meet if there is any requirement or any issue from contractor side ... Our people go and check the field to make sure it is comply with the design, any design input, any changes."

Sub-theme: Team Enthusiasm (TE)

"We try to listen to each other, try to understand each other, and have a positive attitude over the project."

"You cannot write everything down ... I mean there are some written guidelines but then there are a verbal ... Communication in a daily basis."

In the beginning when we finish the first runway, there was a little celebration ... It was just like verbal appreciation I guess from the upper level."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P9	Senior Project Manager – Head of Contract Control Department	Totally New Airport	01:16:52

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

"Honestly our success in the master plan development has increased our team morale and confidence ... The international combination of different expertise of master plan committee ... The several global airport associations ... The team comprised 13 members, each member added value to the project form his experience whether expected obstacles or benefits to the project ... All that have considered and implemented in the master plan."

"We studied project cost and its contingency ... In terms of quality we followed international standards and design accordingly ... Regarding project contingency we assigned margin additional to the expenses in case of any ambiguity ... All this was clear for all parties ... Ministry of finance gave us high level confidence, we had members in our master plan team from finance ministry, government bodies, ministry of interior, ministry of defense and ministry of planning ... Accordingly when you attend any of master plan meetings you can feel the high level of master teamwork."

Sub-theme: Team Trust (TT)

"Actually to build trust especially in the mega project, and this is one of them, when you eliminate the ambiguity and make parties involved feel that they are part of the project itself ... What happened is that we looked at each stakeholder requirements and give him an additional contingency space for such purpose."

"Yes they do have input on decision making, on their needs, but not in additional spaces (contingency)."

Sub-theme: Team Cohesiveness (TC)

Sub-theme: Team Interdependency (TI)

"Actually we meet with a specific body and the designer ... To enable the designer to understand all needs and requirements."

Sub-theme: Team Enthusiasm (TE)

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P10	Senior Project Manager – Head of Mechanical Department	Totally New Airport	01:16:52

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

“All these factors are well defined and cleared to us ... But just for limited to senior-project managers ... Not sure if this shared with the main contractors but I assume it is as they are highly involved in project budget and other factors .”
Sub-theme: Team Trust (TT)
“There is no clear method of sharing project information ... If needed you start by sending a request to the target division and you will receive it afterwards.”
“It’s very rare you experience making decision among project team members as the majority of project decisions based on a top-town manner.”
Sub-theme: Team Cohesiveness (TC)
“Government interest is the crucial one, apart from that no individuals/team interests are exist.”
“The solution focus is based on government/owner again.”
Sub-theme: Team Interdependency (TI)
“I have not experienced any kind of activity coordination between members or any official session of sharing ideas or resources ... If any, will be based on individuals’ initiatives.”
Sub-theme: Team Enthusiasm (TE)
“Yes, I can say that ‘can do’ approach is clearly adopted and was from the early stages of the project and over its cycle.”
“Achievements recognize by project team ... Was through the very top-level ... As a result of the recognition some individuals received more responsibilities and additional tasks.”

Context			
Organization 3: Private and Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P1	Project CEO	Totally New Airport	01:37:37
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
“We have clarified and defined clearly project scope of work to the consultant in order to avoid any confusion and problem in construction stage ... Also his limit ... In order not to have any impact on project contractor ... We did not interrupt or involve in the process of creating the joint venture team or even the organizational structure ... Both parties have their own staff, engineers and equipment ... Everyone knows exactly his scope in the project and lines of coordination as the hierarchy of coordination is well organized. Due to the huge size of the project each side have their own leader and local project director and site manager in order to control all activities.”			
“We are sending our engineers in a regular basis to site office ... The contractor is reporting to the consultant and submitting all drawings, reports for approval ... We are getting the same documents at the same time so we can supervise and monitor.”			
Sub-theme: Team Trust (TT)			
“We rely on electronic system (ACONEX) in where you can monitor all performance of finance, quality control and engineering departments along with the consultant works ... The trust will automatically develop when using this transparent system ... Of course documents’ access has a limit.”			
“With regards to the internal contractor issues (financial or any joint venture related issue), it is the contractor responsibility.”			
Sub-theme: Team Cohesiveness (TC)			
“My interest is complete the project on time and to start the operation as soon as possible ... So we can start having income and payback the lenders money ... The interest is based on “win-			

win" solution for everybody."

Sub-theme: Team Interdependency (TI)

"I usually visit the site with the general construction manager and director for particular issues and also to share the ideas ... We do not involve deeply as we do not have a big team for supervision from our side because we trust each other ... Each shareholder owns the same amount of shares in this joint venture ... They are also supervised and monitored by their higher managerial ... This is one of the agreement advantages ... This is not the case with external sub-contractors as they must have close attention (monitoring and supervision) from my side and contractor side ... Sometime we (the joint venture team) set together to discuss issues and try to find what is the best for all parties."

Sub-theme: Team Enthusiasm (TE)

"Every board meeting I invite the construction manager (the contractor) and emphasize that we must finish on time according to his schedule ... We try to solve any issue and push him as well to keep the project on the right track ... We try not to give excuses to the contractor for any delay ... This pressure not just from our side, it is also from the head of all parties involved in the joint venture."

"The appreciation from the board was my recognition."

"There is not any part of this project has been completed yet in order to recognize people and celebrate achievement."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P2	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:35:30

Intension

Theme B: Project Team Strategy (PTS)

Sub-theme: Project Objectives (PO)

"Very high created by stakeholders as we have to comply with them ... All team engineers contributed in building the schedule and during the execution we started to control the changes on the schedule including the cost ... I personally make weekly and monthly reports which are in house and send it to our company ... We all make sure that we meet all needs of our upper project management on reports and then we send it to them ... All these factors are shared and nothing in this joint venture is hidden ... It is actually so clear and transparent"

Sub-theme: Team Trust (TT)

"We have much diversity on the project, people almost from all over the world (around 20 nationalities) ... It is the habit of local companies to be multinational ... This makes things a bit difficult ... We have different culture, attitude, thinking, and believes ... I think this is one of the disadvantages ... It is under control in fact ... Most of multinational companies have this issue of diversity."

"Crucial project decisions in upper management hand, which is consist of me and the project director ... Other management level have freedom in making decisions to some extent within project construction site ... Cost and changes of design they should come to project management team and make the final decisions ... Even on decisions related to procurement of materials and manpower they cannot make their own decisions."

Sub-theme: Team Cohesiveness (TC)

"... We just melt our each authority together ... I have the power to suck people, from our or their company ... We adopt the "we" concept here ... We talk together always before anything happen, before sending reports ... We never have a sort of conflict, but always think that we have to be careful and fully coordinated before sending any document."

Sub-theme: Team Interdependency (TI)

"we are working as one team here."

"There is nothing here is for us or them ... We are here as one body."

Sub-theme: Team Enthusiasm (TE)			
<p>“this is one of the most successful projects in (..) the country ... We are ahead of schedule, our cost is almost less than budget estimated, we are very much optimistic that we will make a very good profit ... All these factors made our attitude very positive ... We are very happy and enjoying the project ... I enjoyed and realized everybody is positive ... All problems that I talked about them before, they are so minor comparing with the success level of the project ... Because of small numbers of the key stakeholders influencing the project, it made it one of such success really ... We are doing the airport for ourselves as we do not have the headache of consultant knocking on your head everyday on project site ... Or even the project manager from external body working with the client ... We design our project and build it for our own, just like building your house.”</p> <p>“Whenever we are happy of something being finish we thank everybody for it ... It is a teamwork environment and we appreciate everybody ... The project director or I send an email thanking all staff for achievements ... We send every month an email to all stuff and say “this month we were able to achieve the followings, e.g. 1,2 and 3 ... And thanks for this department for their achievement on this and that.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P3	Senior Project Manager – Leaders of Project Managers of IT Airport Construction Project	Totally New Airport	01:16:11
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>“We usually use the package manager ... You see me as an IT manager but actually I am here as a package manager for special airport system and the structure cabling system ... What is the difference here; we give the whole responsibility to the package manager.”</p> <p>“Package manager is responsible for the whole package.”</p> <p>“We share that in related departments ... Planning department, for example, we get their plan frame for the project and its deliverables and everything ... Quality department, we get all documentations for quality and they check and approve them and also guide us for the requirements ... We have that interaction with other department.”</p>			
Sub-theme: Team Trust (TT)			
<p>“I always fully share the information with them ... They see me I am working that way and whatever their previous experience was they adapt themselves to work in this way ... My guys have that characteristic, so they can adapt ... I knew them from before, so that I have chosen these guys to work together.”</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>“I am always open for any subject to discuss ... Very straightforward ... If there is a problem I would like to hear it ... Always also encourage them to tell me the correct situation they face ... I like always to hear what exactly (100%) the truth is and they really understand me.”</p> <p>“Problems’ solution is based on we of curse ... This is always happening in the joint venture.”</p>			
Sub-theme: Team Interdependency (TI)			
<p>“I am lucky that the team just became that much cooperative and collaborative or they make them that way ... I am so happy with the team, they are exactly following a teamwork strategy you know.”</p> <p>“We are working all together as a team here ... We coordinate and organize things together ... Usually electrical, mechanical and IT groups are setting together for coordination and sharing ideas purposes.”</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>“Actually we do not have this kind of stage achievement ... But yes (the CM) does that in yearly</p>			

basis and at the end of projects ... It is money recognition type."			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P4	Senior Project Manager - Quality Assurance & Control Manager	Totally New Airport	01:32:38
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
Sub-theme: Team Trust (TT)			
<p>"I like to share any kind of things with my team; otherwise I cannot manage my team ... Nobody can be alone especially for this kind of works and projects ... I directly share that with them through any methods, email or directly face to face ... This way of dealing with team of course it develops the trust between us and actually all of them trust me and like my way too ... I also share social things and sometimes call them and ask about how they feel in this project or country and if they have any personal problems ... Otherwise, I cannot reach them and understand their mentality. Accordingly, they are dealing with me like a big brother or father sometimes."</p> <p>"I give them full responsibility but you have to inform me, you can make a decision sometimes ... I believe on that and trying to push them to do it, if they make some mistakes I have to know that and then we can solve the problem easily and very quickly."</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>"Mostly cooperation is my way; I am trying to do this ... I have around 15 people from different countries ... This is the kind of culture here and languages ... They are trying sometimes to make small group in there, but I normally do not let them to do it ... Because by that we cannot be a good team, team is team for me in everything."</p>			
Sub-theme: Team Interdependency (TI)			
<p>"We do activities together ... The construction works never finish in construction site and we have always to coordinate other activities ... We have to share other things and see things together ... This is very critical for me."</p> <p>"We do work together ... They (team members) have different kinds of responsibilities and knowledge, it is normal ... But I always push them, if you need any help of any kinds you can ask others and then if they cannot answer come to me and we can then discuss al together."</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>"They (the local contractor) may have some other systems but not easy for me to have it ... I cannot say that they do not have that completely but not for me."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P5	Senior Project Manager - Contracts, Cost Control & Procurement	Totally New Airport	01:01:06
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>"This was strictly controlled by project manager of (..) the project manager, so everybody was clearly aware of project objectives ... Those objectives had developed by (the main contractor) but controlled by (..) the project manager."</p>			
Sub-theme: Team Trust (TT)			
<p>"The information was shared through series of management actions and systems, like meetings of course and monitoring of performance."</p>			

<p>“Team members were able to make an input I decision making process ... They are qualified with skills and properly selected in accordance with positions plus that our subcontractors were also selected appropriately either from (..) main contractor country, like the electromechanical subcontractor, from (..) client country or other European sources like all supplier of baggage handling systems, boarding bridges and all airport components.”</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>“We had sat with each other and build all interest related.”</p> <p>“It was actually based on we ... But of course the final decision is I, which is (..) the main contractor as they have the highest share percentage.”</p>			
Sub-theme: Team Interdependency (TI)			
<p>“We had done many activities together ... Design department were coordinating with site in terms of how to simplify the construction ... Same thing happened between quality control department and construction, coordination between both of them in order to achieve the best jobs quality.”</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>“Every year for team including some individuals’ cases like solving a dispute with the employer or doing something special ... We had recognition and special evaluation for that ... It was only cash and certificate.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P6	Senior Project Manager - Project Finance Manager	Totally New Airport	01:15:22
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>“It was a bit difficult ... Because of the communication, different mentalities or believes within the team ... The nature of this environment (..) project country, that employees hiring is inefficient to some extent where some of the required skills especially communication are not exist ... You can find some people with lack of English language efficiency but still work in a multicultural environment ... One of the obstacles I have faced within my team.”</p> <p>“I think an effort from both sides must be paid in order to solve the language issue ... The communication factor becomes better within this environment ... From time to time we have been asked to write some reports in monthly, quarterly and semi yearly basis ... Way of how I evaluate myself too ... By providing the management with their requirements, information and reports on time, I make sure things are moving well.”</p> <p>“I do not hide anything from my team especially within the finance department of a construction company ... The matter of cost is so clear for everybody and each individual totally understand it and try to make an input in a way or another.”</p>			
Sub-theme: Team Trust (TT)			
<p>“Some of the information shared with all members, while you cannot it share some of them up to certain level and also there is a confidential information which cannot be shared with anyone ... Some information should not be shared for a certain period and then it is ok to be announced, other information are shred just with top management level and even in that level they share some of their information with us or the upper management level.”</p> <p>“It is good to share project information with team member ... Sharing the desire of upper management level regarding the early opening ... Some of my team member become annoyed of this extra pressure, so I should explain to them the project status and all related issues, which in fact make them part of the whole equation.”</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>“Cooperation is there ... Most important thing in achieving targets is motivation from top management.”</p>			
Sub-theme: Team Interdependency (TI)			

<p>"We have so many activities of most departments ... I have to set with structural division engineers ... We are highly involved with the procurement department ... We set actually to discuss current issues and even we brainstorm and share ideas of expected problems ... Prior to any negotiation with external people we discuss and develop different strategies on how we deal with them ... This is in fact really helping us."</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>"I should make a good relation with my team ... One of human being believes ... You should leave behind you a good reputation ... One of project strategies is staff bonus ... Which is very good motivation for them to work hard and achieve targets ... I am trying to help them improve themselves."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P7	Senior Quantity Surveyor Manager	Totally New Airport	01:05:57
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>"Quality is to pay subcontractors the correct amount ... I told them (my team) that never keep any job in your desk finish it immediately ... When we visit the construction site we follow all procedures. We work here in office departments."</p>			
Sub-theme: Team Trust (TT)			
<p>"We share information with everybody work under the joint venture."</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>"We are here like one family ... There are many reasons for this ... One of them is that most of the people here are young so we speak the same language ... Of course sometimes we have some discussing and arguments, "This is a hard questions ... I give them a space but at the end of the day they must inform and come back to me, otherwise I cannot control." "Of course we."</p>			
Sub-theme: Team Interdependency (TI)			
<p>"Today afternoon we will go together to the site, I mean my team ... I go with other department senior managers to construction site ... I encourage and let my team to do the same, as sometimes they go with other departments' colleagues to construction site too ... We have also some off-work activities, we go out together."</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>"I give them inspiration by telling them my previous experiences and how to behave when they face problems as they have to face and solve them ... I let them learn from my past experiences." "We got bonus in a regular basis, we have a scheme for that ... We had a bonus last year."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P8	Senior Project Manager - Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>"We are following (..) main contractor's corporate discipline, from there we draw or find the HSSE plan for this project"</p>			
Sub-theme: Team Trust (TT)			
<p>"All information are shared between all team members ... If any person started in this project we give him an induction, regarding to what is happening in the project so far, where we are and</p>			

<p>what is our target ... This is called safety induction in this project ... We have a monthly report, this is for responsible supervisors.”</p> <p>““We are looking for safety and they (supervisors or engineers) know the work better than us.”</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>“Actually this is a construction project, means coordination, communication and cooperation ... If a main subcontractor made an accident on site, we look at their engineers and assess the scenario and then make the report.”</p> <p>“It is we always, I must do it like this ... And “we” means responsibility for everybody.”</p>			
Sub-theme: Team Interdependency (TI)			
<p>“We share activities ... We have a weekly walk through on site; we call subcontractors including our people ... We are sharing and making reports and send those reports to everybody.”</p> <p>“There are two ways for this one ... We have a monthly meeting and we call subcontractors and in the event of emergency we have separate meetings ... In monthly meeting we discuss all kinds of issues whether current or expecting problems.”</p>			
Sub-theme: Team Enthusiasm (TE)			
<p>“The head of this department assign duties for each individual ... We are monitoring every day activities, even when we have meeting, we are monitoring the outcome of every day.”</p> <p>“We have achieved over 6 million man hours without a lost, our target at the end of the project we need to keep the same standard ... Once we achieve that we will receive recognition and appreciations from our upper management level.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P9	Senior Project Manager – Design Project Manager	Totally New Airport	01:15:37
Intension			
Theme B: Project Team Strategy (PTS)			
Sub-theme: Project Objectives (PO)			
<p>“the project as a whole is divided into several sections ... Every discipline is a package, there is package manager for those disciplines ... They have started with me in the design discipline and when the design is finished and developed they will start the site work ... It is not the issue of high quality but it is the accepted quality ... So, this is the approach to have low price with accepted quality.”</p>			
Sub-theme: Team Trust (TT)			
<p>“I have insisted when I started here to have an efficient document management system ... I know that the document management system or the information is a project disaster if it is not working properly in a correct way.”</p> <p>“We had a similar project before where we had a huge gap in information flow such things will make a disaster on site as you have to demolish and rebuild many things ... That is why I insisted to use web Based Document Management System called ACONEX ... I see this one is the best ... I know the size of the project and we going to reach 60-70 thousands drawings and every drawing has different revisions and versions, so how you going to control this ... I think human cannot control that.”</p> <p>“Every team member can make an input, whatever his position he can make an input and we listen to him and analyze every worth idea ... As sometimes there are valid decisions come from individuals ... Everyone has an open channel during the development stage.”</p>			
Sub-theme: Team Cohesiveness (TC)			
<p>“we never talk about “I”, we are focusing on the project itself and we want to deliver the project regardless of the issue.”</p>			
Sub-theme: Team Interdependency (TI)			
<p>“We have to share activities with other departments, as procurement department is connected to us too much ... We share also activities with project cost control and with construction site team ... We are having regular meetings with those people ... We always discuss the future, we</p>			

discuss possible problems and difficulties that might come in the future and just raise a flag to take care of some particular areas.”

Sub-theme: Team Enthusiasm (TE)

“I do not interfere with people that have no experience but I only have to monitor them ... Younger generation we have to give them support ... I have to let them think and then come back to me, if any of them make a mistake I have to tell him but in another away like “yes you might be right but we do it in another way” to be better in construction.”

“it is all about good communication.”

“Actually there is, but not in my department.”

11.2 Theme B: Project Team Strategy - Data Interpretation

11.2.1 Organisation 1 – Private Ownership Structure

According to O1P1, a programme manager, O1 follows the project management standards of the Association of Project Management (APM), when developing its project objectives and related goals. Project business cases and briefs illustrate project team members, stakeholders, overall project goals, expectations and related measurables to project parties. The delivery strategies, rules and responsibilities of project team members are also identified. The key strategy throughout is to involve parties to work together at the early project stages, in order to understand the common project goals and to define the nature of the project team collaborative environment (O1P2). Senior project managers ensure that work is cross-functional and integrated, and encourage open and honest conversations between project team members (O1P3, O1P4, O1P6, O1P7 and O1P9). Different people from various areas come together through workshops or meetings, where they get to know each other, share ideas and discuss business and project purpose, constraints, direction and what needs to be accomplished become clear to all team members. O1P8 experienced difficult and challenging periods during his selected project, and a lack of collaboration. The project was based on traditional contracting procedure, tender to contractors to bid, instead of a common organisational framework of collaborative approach to develop airport projects. However, they managed to unite the project parties, the contractor, stakeholders and project team, and ultimately overcame the difficulties. He remarked, “we explained to them what we are doing and where we were with the project process, so all the different stakeholders could see what happened, what we are aiming to build, where we were in the process and then to encourage them to give feedback.” Overall, the project team strategy adopted within O1’s team environment was transparency and openness. The project objectives and its associated timeframe, cost, deliverables, quality and safety procedures were clear to all parties, except financial information, which, in some cases, was not necessary to be released to particular members of stakeholders (O1P8).

O1P1 clarified how an organisation’s strategic aims are associated with project goals and objectives; two strategic techniques (Accurate Service Quality and Quality Service Measurement) are used to identify necessary projects. Both methods measure airport operational performance in terms of customer satisfaction, and, accordingly, various project goals and objectives are realised. Senior project managers look at these measures at the

beginning of the project and then identify what the outcome will be and how they hope to deliver this with the project team. They consider the measures again at the end of the project and produce a benefit map that relates all the outcome measurements back to the strategic aim.

In terms of project information flow and trust level among all project team members, O1P1 stated that during the project lifecycle numerous procedures are followed. There is an end of month process where project dashboard and various project management indexes (schedules, cost, quality, logistic reports, etc.) are shared between project team, sponsor and key people within the organisation. At the lower level there is a monthly stakeholders' programme board, for the project team to give a monthly update on progress and related issues on site to key stakeholders. In terms of project common goals, all information is shared between different parties, particularly, the challenges and issues. As O1P6 commented, "sensitive information we could not share that. We share other information like schedule, quality targets, objectives, some of the stakeholders' requirements and what will be successful for them." O1P2 and O1P3 stated that developing trust in construction is all about good, open and honest relationships with the project team, contractors and stakeholders. O1P3 stressed

open and honest conversation. How I want things to work. No hidden agendas. If you deal with things in a way that is just practical, straight forward, open and honest and then encourage people to earn those sorts of conversations, you will have the right product in place.

However, sometimes building a good relationship with project parties takes time as it depends on commitment to task promises (O1P8). O1P5 stated that working closely with others facilitates the development of trust, while for O1P7, once parties have common project goals, trust can be easily developed.

With regard to team ability and willingness to make decisions, O1P3 mentioned that individuals have clear rules within projects and they do not do anything that either replicates or overlaps. When team members follow the rules properly they may recognise that they are making quite big decisions or contributing towards big decisions on behalf of the project (O1P4). Consequently, project team members have an input and are able to make decisions within their task boundaries (O1P7). O1P1 and O1P7 highlighted that various parties have

different interests when participating in a project. A project has a number of targets towards which every party is working to achieve project goals. Individual interests are also aligned with these goals. O1P7 pointed out that “when rolled it down to the rules and responsibilities and the actions that you need it by various people, then it became or maybe individual targets for them.” In O1 all rules and responsibilities are clear and project common goals are very well explained and agreed by all parties. Consequently, solution focus that achieves project targets will, ultimately, satisfy everyone.

Working together and coordinating activities are common practices within most chosen projects of O1’s senior project managers (O1P1, O1P2, O1P5, O1P6, O1P7 and O1P8). Even when team members are not working in the same environment/place, they regularly meet with different parties and stakeholders through workshops or weekly/monthly meetings. O1P1 stated that in order to provide an effective working environment for team members, there should be effective communication arrangements. As O1P3 mentioned, “they should be doing that in a way that is more efficient and more integrated with everyone else.” By doing this everyone can understand what all the other members of the team are doing and how they will contribute to the project’s success.

Various techniques have been utilised by O1’s participants to maintain a positive approach within their team environment. O1P2 stated that it is being clear about everything that a team has to do and supporting it in terms of achieving project goals. O1P5 has very strong team values and a really positive outlook: “we are going to do this, we cannot fail.” O1P6 said that the leadership characteristics of a project manager are crucial in creating a ‘can do’ environment, in which there is optimism and positive thinking and attitudes are adopted. O1P9 asserted “if you go with anything rather than ‘we can do approach’ you have lost half the battle.” He added also that in order to motivate project team members, a project manager has to believe in himself, to be a ‘can do’ type of person and encourage that attitude in all individuals.

In O1 achievements recognition includes formal celebrations following the completion of projects (O1P3, O1P5 and O1P6). However, when developing annual performance reviews and monthly reports for board members and other key people within the organisation, project team members who achieved great results are recognised (O1P1 and O1P2). Their recognition can be through talking about their success, thank you letters and face-to-face appreciation. O1P4 stated that he always made sure to convey, through email, any good

feedback to his project team and to thank them for their hard work. In recognition of O1P5's project success a number of people were invited, the in-house senior managers, operation team, contractor senior managers, main project and contractor team and undersecretary of state. "This was really good" (O1P5). O1P9 remarked that "there is not enough recognition sometimes for people that going extra miles because it becomes expected in our environment." In particular, he thanks the project team and recognises good work during weekly meetings. Project objectives in O2 are developed early by either the in-house project team or coordination activities with the design consultant.

11.2.2 Organisation 2 – Public Ownership Structure

Project objectives and related cost, timeframe, schedule and expected deliverables in O2 are developed early by either the in-house project team or coordination activities between the internal project team and project design consultant. Some senior project managers involve major stakeholders early in the project and work closely with them to understand their requirements and develop project objectives (O2P4, O2P6, O2P8 and O2P9). However, following the selection of the main project contractor, these objectives are reviewed and discussed with contractors and other stakeholders (O2P2). O2P3 has experienced unstable conditions in terms of additional project requirements, following the late involvement of project users. O2P6 stated that at project initiating stage everything was clear, but the allocated external project manager underestimated the project timeframe and cost which contributed to massive delay. O2P2 described his internal teamwork which contributes to project success: "we sit together, review together and see all these kinds of critical paths. Our staff are number one and once we decide what has to be discussed with the contractor we call the contractor to come in." For O2P7, "the project budget is away from either consultant or contractor, after completing project cost estimate we only share with them how we want to schedule project different activities and they give us their feedback."

Project information is fully shared with upper management level and in-house department heads and they have to decide whether to distribute it to their team (O2P3 and O2P8). O2P7 stated that "trust between our internal team is highly open, but with external people is no way." In contrast, O2P4's project team was working cooperatively with a project consultant and contractor as one team and sharing all project information. O2P5 adopted the same concept in his project, in which nothing was hidden from different parties: "If you want a

good job quality environment you need to spread all information.” He also emphasised the importance of involving external people, operation, customs and the airport manager, at the early project stages in order to obtain the relevant information and share it with project parties. O2P9 mentioned that the only way to build trust, particularly in mega projects, is to eliminate ambiguity and involve project parties and make them feel part of the project.

In terms of team ability and willingness to make decisions, O2P7 and O2P8 described it as a type of hierarchal structure. Project members and end users, in particular, can contribute to the decision-making process through sharing ideas, opinions and clarifying their requirements (O2P3, O2P6 and O2P9). However, the upper management level of the public operator makes the final decision. In one aspect of O2P6’s projects, communication control systems, all decisions must be in accordance with the international civil aviation organisation or FAA laws, otherwise decisions go back to upper management level. One of O2P4’s team members had additional authority in making decisions of a specific task, which significantly increased his confidence level.

O2P4, O2P5 and O2P8 believed that cooperation between team members is an essential aspect of success. They have adopted a ‘we’ approach instead of ‘I’ in their project experiences. For O2P8, “it always has to be we did it.” In line with this, O2P5 stated that everybody shares project success or failure, so an effective project environment does not exist without team cooperation including project contractor and consultant.

The various meetings and workshops of O2 are an opportunity to share activities between the project team and other parties. O2P2 had daily meetings on the project site with his project team, the project manager and contractor team, in order to discuss day-to-day issues and suggest solutions. O2P3’s in-house project team, the technician team, shared a specific site activity with the contractor team, in accordance with the contract requirement. However, the internal project team of most of O2’s projects have coordinated and shared activities with the project consultant during the project initiating stage (O2P9); while during the construction phase in-house people, architects, mechanical and electrical, have had regular site visits to check work status (O2P4, O2P5 and O2P6). O2P8 stated that apart from the weekly meetings, various disciplines and the contractor team would meet if there is any additional requirement or in case of site issues.

O2P3 explained that the ‘can do’ approach is developed within the project team when all members have requisite skills and competences to accomplish a specific task. O2P2 stated that effective project management practices can provide a positive working environment for success. In O2 there is no official method of achievement recognition and appreciation. However, O2P4 sends thank you letters to his team members following any achievement. The recognition and appreciation of O2P2 is when general airport directors assign him to different projects as a project manager and seek his help and recommendation in complicated issues. O2P5, in his successful project experience, had various dinners or lunches with his team, project contractor and consultant when major project milestones were reached. He also commented, “I really care about appreciation in such cases, so it has to be all of them, as I am looking always for better performance.” O2P8 and O2P9 shared their departments’ success by organising events and rewarding people who have been outstanding in their performance. O2P6 received a certificate in recognition of his great performance from upper management level. Following the project success, the project team had a celebration organised by the public operator and project contractor. In contrast, upper management people have broken their promise to O2P3’s project team members following their successful achievements.

11.2.3 Organisation 3- Joint Public-Private Venture

In O3, the main project objectives are developed by the public owner. Project scope is defined clearly by both project client, who represents the owner, and project consultant (O3P1). However, after creating the joint venture, detailed and common objectives and organisation structure and lines of communication and coordination are established by a joint venture team. Every party in the joint venture becomes aware of the project scope and what needs to be accomplished. O3P2 stated that all project team members had participated in developing project schedules through early project meetings. The entire project has been divided into numerous packages, departments, in which each senior project manager was fully responsible for his package including distributing the project plan, its deliverables, rules and responsibilities to team members. Moreover, there is effective interaction between different departments (O3P3 and O3P9). According to O3P3, “If we cannot work as a team like coordinating with the package managers, subcontractors and all other disciplines, we cannot manage the project, it is not easy.” Due to the multicultural environment of O3, including team members, O3P6 experienced some difficulties in the communication between team members, particularly lack of a common language. However, members have overcome

this issue. Project scope including objectives, goals, timeframe and lines of communication are clear for all project members and nothing is hidden or ambiguous (O3P1 and O3P6).

In O3, senior project managers and their team members have faced some difficulties in developing trust in a project's early stages. According to O3P2, this was due to differences in cultures, attitudes, thinking and beliefs between project team members. O3P1 stated that the effective and transparent electronic system they used in communication and documents interchange was able to develop trust significantly in the joint venture. However, project information was fully shared, especially between the department's team members through using the electronic system, meetings, email or face-to-face communication (O3P3, O3P4, O3P5, O3P7 and O3P8). O3P4 noted that "nobody can be alone especially for this kind of works and projects, this way of dealing with team of course develops the trust between us and actually all of them trust me and like my way too." He also considered social and personal issues which helped him understand team members and gain their trust. O3P6, a project finance manager, commented that it was crucial to share project information with team members, but up to a certain point as there was confidential information which could not be shared with everyone.

Package managers encourage their team members to contribute to the decision-making process (O3P4, O3P5 and O3P9). Crucial project decisions also belong to the upper management of the joint venture (O3P2 and O3P9). O3P4 and O3P7 give their team members full responsibility and authority to make decisions, but they have to inform them beforehand in order to maintain control. O3P5 stated that project individuals should participate in the decision-making process as they are qualified and have been selected according to their skills and competence in the field.

Completing the project as soon as possible and starting the operation phase is the common interest of the joint venture team (O3P1). This makes the solution focus based on the 'win-win' approach for all parties, which, ultimately, benefits the overall project. As O3P9 remarked, "we never talk about 'I', we are focusing on the project itself and we want to deliver the project regardless of the issue." O3P2 and O3P4 stated that the project team and other parties always cooperate and help each other to achieve their mutual goal. O3P3 mentioned that "this is always happening in the joint venture agreement."

O3's project team was working at the same place, a project site. This meant that individuals were working as one team, organising and coordinating various activities (O3P2, O3P3, O3P6 and O3P7). According to O3P4, sharing ideas and discussing construction issues are a common practice in a project team environment. He stated, "construction works never finish in construction site and we have always to coordinate other activities. This is very crucial for me." Teamwork strategy was effectively adopted by various departments within the joint venture. External people had several meetings and workshop arrangements, on a regular basis, with the project team, in which they negotiated and discussed work-related issues (O3P6). O3P7 encouraged his departments' members to share both working and social activities with other colleagues. O3P8 stressed that "this is a construction project, means coordination, communication and cooperation. It is 'we' always, I must do it like this." O3P9 explained that all project departments are connected, so they have to discuss the future and potential problems and difficulties.

The 'can do' approach of O3 has generated in all members the desire to complete the project on time or even early to gain operational benefits. "We are very much optimistic that we will make a very good profit" (O3P2). O3P7, based on his previous experiences and how he solved construction-related issues, played a significant role in inspiring his team, while for O3P9, supporting the project team, being always close to them, influencing their behaviours and attitudes and adopting an effective communication method are key aspects of professionalism.

In terms of achievement recognition, O3's deputy project director, O3P2, sends a monthly report to the joint venture's project team underlining all the departments' achievements and expressing his appreciation for all accomplishments. O3P3 and O3P7 mentioned that the construction manager's company has an annual recognition scheme for their employees, which takes the form of financial bonuses and certificates. However, there is no recognition in the joint venture agreement apart from arranging celebrations and sending letters of appreciation (O3P8).

12. Appendix L

Interviews Data Description and Interpretation: Theme C

Appendix – L

12.1 Theme C: Stakeholders' Engagement - Data Description

Context			
Organization 1: Private Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P1</i>	<i>Senior construction project manager – programme manager</i>	<i>Refurbishment of Terminal Departure Lounge</i>	<i>01:28:46</i>
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>“We are a very regulated organization, so we have to make sure that we engage with stakeholders, it is part of regulate our model ... We have monthly stakeholder programme boards, we engaging with stakeholders to make sure that they aware of what we are doing.”</p> <p>“We have what we call a capital investment plan working group, the lead stakeholders across the whole of (..) the airport, not just within the terminals, so we present the project to them that we seeking to deliver their endorse, if it ok for us to spend the money on that.”</p> <p>“We give regular update to the stakeholders in weekly stakeholders’ meetings just to keep them updated with the progress, seek their inputs into decisions have been made, special requirements ... Then we have special meetings with them and around certain issues.”</p> <p>“Managing stakeholders is the project manager responsibility ... We follow APM (Association of Project Management), so we identify who the stakeholders are, the stakeholders plan, we assess who the key ones are, stakeholders engagement plan, we also justify sort of meetings we expect to have, who expect to be invited and how we intend to address certain aspects ... We have specialists’ stakeholders consultants, IT, security and specialist consultation log who determine who want to be invited and when and confirm that you doing that ... Typically the day-to-day stakeholders’ management managed by the contractors themselves because it is very important for their planning, then share at day-to-day level with stakeholders ... And they do that more informally by going around and talk verbally with people.”</p>			
Sub-theme: Project Information (PI)			
Sub-theme: Stakeholders Meetings (SM)			
<p>“At the very beginning of the project, one of the of real success factor was that we had 2 big workshops, one more internally with all of the (..) airport top stakeholders, internal operations, engineering, fire departments and etc ... This is to present the project that was proposed, the phasing and how we intend to do it, some graphic images of what we expect the outcome look like and how it will look during the phases of construction ... We have the 2nd one next day, this one with the external, all the airlines, the ground handles, representatives from various retailers who operate, the key persons ... sharing our proposal for managing that work, minimizing the impact ... Gain their confidence in the outcome of the projects we mainly shared openly how it going to look ... At least they understood what was coming, so was not surprise ... What is their input to make sure that their views we considered and where we could do an improvement we did ... Obviously we just manage those expectations which are very important.”</p> <p>“We have those key ones at the begging ... We have the regular weekly ... All the stakeholders involve, just kind of more representatives’ people ... Retail representatives ... Representatives’ airlines, the 4 main ones will come to the meetings and the others they knew if those are happy they will be happy.”</p> <p>“The main ones have the most stakes in the organization, we make sure they come ... The other</p>			

ones maybe have a few flights a week.”

Sub-theme: Concerns and Actions (CA)

Sub-theme: Stakeholders' Negotiation (SN)

“NEC3, the contract mechanism ... It is supported by a computer system called SIMAR, sort of contract execution management ... It is a web based tool, all parties can access that tool, run by an external company ... We used it and it is very good.”

“This is how we manage change, accept notice and compensation events and raise a project management extension and be around impacts for time and cost.”

“We have weekly change management reviews ... Notice of compensation event will be raised and then we will deal with and might then increase the target price on the contract, and might not the target price might stay the same ... Increase to the project cost, obviously then gets manage within the pain gain mechanism on the contract or there might be extension to time ... An impact in terms of time extension which will then have to be addressed by either accelerating the schedule, cover that or accepting that increase in time ... It is all manage under NEC3 and we use web based computer system that called SIMAR to manage the implementation of that.”

Sub-theme: Incentives (I)

“Incentives in terms of pain and gain to make sure they deliver under budget.”

“For individuals, at the end of the year they have a performance appraisal/assessment and we have a performance related bonus ... At the top of achiever, above average, middle or low ground, their bonus is proportional on where they fit on that curves.”

So, there is strong incentive there for them to do a good job and there is also something we have here recognition scheme called (...) the airport star, where I nominate them for doing a very good job and they got sort of softer rewards, there is a small financial benefit ... That is open for people not just on delivering the project, it could be somebody does a good job ... They get that recognition, they get a badge, 100 pounds, sort of voucher that they can use ... A small things but it has seen very positive thing applied to this project.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P2	Senior Construction Project Manager - Portfolio Manager of Asset Replacement & Commercial Capital	Minor Construction Works Programme: Office Buildings, Roads Networks – Escalators	00:52:45

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

“Stakeholders management always an interesting around the airport ... Lots and lots of people, huge numbers of people that need to be engaged ... We have specialist consultation process which is very formal process that allows us to go and engage with appropriate people and this is very much internally, so this is technical things, building control, design and all the internal functions ... We have then the serious of established forms that we can go to and present what we want to explain around the process in terms of getting signs from governance, there is a certain established forms that it goes to stakeholders' boards where we present our projects and we can seek input from the airlines ... It is very structured.”

““We have a portfolio works that we need to do, and as project managers we are assign to a particular pieces of it and we then take it away and deal with it.”

Sub-theme: Project Information (PI)

“We do a full stakeholders' assessment ... What influence they have, what we need from them, how we are going to engage them, all of that captured and we start that from the scratch.”

Sub-theme: Stakeholders Meetings (SM)			
“We do regular update of the stakeholders meetings, If need to be on bigger projects we then have a specific working groups, groups looking at specific areas.”			
Sub-theme: Concerns and Actions (CA)			
“In the working groups, you can do one-to-one conversations to understand people, what their concerns are, and what their key drivers are ... The same way you do with the contractor what success to them and what success for our stakeholders ... It is very much around everybody come at the table and we talk about and this is the form and we take away the actions and if anybody has a conversation outside, they bring that facts that days on that particular action ... So, on a way of making sure that everybody receive the same messages.”			
Sub-theme: Stakeholders’ Negotiation (SN)			
“It is dealt with it within the project, project managers effectively access the receiver of the change notes, conversation events, and they are responsible for dealing with that.”			
Sub-theme: Intensives (I)			
“Yes I believe on it, good working behavior ... It is much better and more effectively in kicking people.”			
“With the contractor, pain gain relationship ... We also had a one off incentive payment, so if they delivered certain capacity by such and such day they are entailed to 25% of a bonus ... If they achieve full capacity that we need it by another date again they will entailed to a 100% of their assets, it worked very well.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P3	Senior Project Manager in Direct Support of Strategic Initiative – Pre-construction Activities	Strategic Construction Projects Perspective	01:25:56
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
“This is a very difficult job at an airport I have decided, the stakeholders even on a very small project, the stakeholder burden and vast, and they are usually or some of them are very operationally demanding, some of them are commercially demanding and some of them are both.”			
“It is quite often an indeterminate problem that you are dealing with, which is also the thing that make it quite exciting place to work ... As a regulated industry we have a very formal, very prescribe process for managing stakeholders engagement, it is a process known as consultation ... We have to demonstrate that we have a properly consulted with our airlines’ stakeholders ... We consult formally on monthly bases through a serious of organized board, we have different hierarchies of board for airline engagement and priority ... Any internal client board that would allow the project to progress to the next stage.”			
“Outside of the very formal monthly process, there is lots of less formal engagement that you would do as the project manager ... You have to have got everybody in the right box ... Then you have got all the client stakeholders or third party stakeholders.			
“For every project on the airport you have client stakeholders which are usually on operational members of stuff, our property department, commercial department, and you have airlines stakeholders and you quite often have 3 rd party supplier stakeholders, so they are the retail concessioners and baggage handling agents and passenger services, contractors and quite often you also deal with control authorities, so you have got quite sort of broad range of sort of divergent group you after them.”			
Sub-theme: Project Information (PI)			
“We rely on emails, regular meetings and workshops. The full sweet, every ways possible to talk to people.”			

"That is in groups rather than individuals ... There are couple of key individuals that might pick out but largely focus on group of airlines, client people, 3rd parties, control authorities."

Sub-theme: Stakeholders Meetings (SM)

Sub-theme: Concerns and Actions (CA)

"Yes we talk to people consistently throughout the whole project, end to end, so every single stage of the project you are talking to people about whatever the issue is at that stage."

"The person I am talking to around the early stages of the project is usually be somebody quite senior with the ability to influence and also with the authority to decide or speak on behalf of particular business area ... Obviously, people that you need to speak to, then the numbers start to get larger because you need people who know each little area of the business properly ... design work shops, sort of briefing sessions on design strategy and that sort of things ... Start to get into the details and then they will delegate 2 or 3 people and their department helps of take things on a bit further."

"The range of stakeholders you are dealing with in this specific leads for certain areas, changes on the project goes through."

Sub-theme: Stakeholders' Negotiation (SN)

"We have a formal change control process, so through an early warning system ... The project manager is accountable for it, but it is done through our MSP (Managing Service Providers), we have our software system and I use my commercial manager to handle those sorts of things."

"Actually they do not make the decision, I make the decision ... They give me a recommendation because they are the commercial expert ... Each week and I would be setting down with my MSP team and certainly ahead of any contractor sessions, we would go through the commercial items and we would have conversation about commercial performance of the contracts and if there is any issue we take a view of how we are going to play it with the contractor, and the commercial manager will advise me."

"I have not been in a situation where I have been in a dispute with a contractor, because we work with framework companies and so we tend to have reasonably good relationship with them."

Sub-theme: Intensives (I)

"In terms of contracting options, we use any NEC3 contract, so there are options and full of Gantt chart type, contractual mechanisms and less often used at the early stages, and it is usually based on cost ... We are using incentives, it is largely around the cost mechanism, because at the end of the day if they finish early then they should save some money."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P4	Senior project Manager - The capacity Optimisation Programmes, Airfield team	Airside Physical Facilities – Dealing with Snow in Winter Condition	01:19:40

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

lots of stakeholders' and defiantly there is a potential of conflict ... The whole phase of develop a design, sign off the design and go and build it, we are really trying to stuck to that and we have had various degrees of success."

"That is very much the standard of (..) the airport's stakeholder's management process ... I think when you are in delivery an issue comes up and you need to solve it and then you do get the potential for conflict between various parties, I think then it is just about this the issue, this what I need to achieve to overcome the issue and understanding what we have to do to manage that ... I have got stakeholders in every new hat and I need to get their endorsement, so it is about explaining the issue, what benefits you bring to me and what the impact of it if we do not do it, asking for approval, what is the compromise that we can all agree to ... It is just sort like a

develop plan, influence and negotiate with them.”			
“No, just me ... I think it talk very much about stakeholders such as end users and other service providers in terms of electricity companies and the IT companies.”			
Sub-theme: Project Information (PI)			
Sub-theme: Stakeholders Meetings (SM)			
Sub-theme: Concerns and Actions (CA)			
Sub-theme: Stakeholders’ Negotiation (SN)			
“We have got a contract on board, and all sort of that change control ... We have got a change control department which deals with scope change control ... If completely new scope needed to be delivered it would go to formal project change control to put that scope into my project.”			
“There is that type of change control and then there is a change control about the contract or new scope, dealing with change in the administration of the contract.”			
“That is me, my contract manager, my planner and my cost manager.”			
Sub-theme: Intensives (I)			
“The contractor to meet a certain deliverable on time, but you would need the luxury of funding to be able to afford that flexibility.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P5	Senior Project Manager – Fast Development Projects	Separate Temporary Terminal	01:13:47
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
“Within our own people, I have involved as many people as I can think of in the scooping of the project, so I have got people early and ask of their views ... What they need to include ... We had several meetings ... it is a bit of a PR (Public Relations) project.”			
There were areas where we needed to be careful and make sure we got people on board ... There was a long process of taking them out, taking to them during the design phase and then taking them out during the construction and after the construction and the trails I have mentioned which run about 6 weeks before it went to operating to try and get them familiar with the operation and with the timing of it.”			
“No, I mean I did a lot of it, but also the (..) project team were already having those discussions, because we had two big parts of the (..) terminal operation.”			
Sub-theme: Project Information (PI)			
“Once we sent the scope and we knew the size of the building we stuck on it as far as possible.”			
“I do not think changed very much.”			
“they had input into mainly around the process that we are going to operate ... For me the most difficult stuff was getting all the IT right and making sure that was right, because there was a lot of IT that was needed to go in there and the IT from both our side and from the airlines side is notoriously slow, so trying to keep get those guys to nail their scope and deliver it was a worry.”			
Sub-theme: Stakeholders Meetings (SM)			
“Well we had workshops around IT ... Workshops around the security elements, what needed to be there from the security point of view, but again mainly related back to IT.”			
Sub-theme: Concerns and Actions (CA)			

Sub-theme: Stakeholders' Negotiation (SN)			
<p>"We had a couple of days delay on erecting the building ... Yes there was an allowance made financially ... Actually we had to finish; there was no flexibility about finishing on time."</p> <p>"Weather was the biggest issue around that, because you cannot change the weather if it dangerous, so you have to delay, but we had enough built in, I think we had about a week to 10 days in the programme to allow for that ... And financially any other delays that we could of come up against delivery of items or workforce we would of pay extra to mitigate."</p>			
Sub-theme: Intensives (I)			
<p>"We had incentives that built in to the contract for (..) the contractor, so if they hit the deadline they got a bonus ... Just for the contractor."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P6	Senior Construction project manager	Refurbish an Old Domestic Lounge	01:05:16
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>"Always I try to do in project is develop a stakeholder plan to identify who other stakeholders are, what their power influence is ... Then set up the plan from there and you getting manage stakeholders."</p> <p>In (..) the airport we have stakeholders' management ... Gnerally make sure that we engage all stakeholders properly as part of the consultations that comes from regulations."</p> <p>"In the individual projects, we put stakeholders plan together, so that plan identifies who stakeholders are, what their influence is, what their requirements are ... You generate a plan of how you going to manage stakeholders, do you have one to one with them, do you involve them in developing solutions ... Generally my philosophy is that you bring the stakeholders along with you and you make them feel part of the team and make them feel part of the objectives ... So try to get them in a sort of win-win situation."</p> <p>"We did the matrix (X, Y), what we do we just say stakeholder 1 is up there and then we identify influence and approach, it worked well actually, if you do it well."</p>			
Sub-theme: Project Information (PI)			
<p>"We have a change control process, so if there is a request of change that will then go for a process ... We will get the requirements from stakeholders, why are they doing it, and then we just get a sketch and just cost it up and get it agreed ... That why we use change control ... As soon as that approved we will introduce new information to a project team ... This could be through a phone call, it could be a meeting and it could be a workshop ... Generally, at the front end of the project at the early stages we do have workshops to get different options."</p>			
Sub-theme: Stakeholders Meetings (SM)			
<p>"We would have regular stakeholders' meetings ... Change meetings will be every week ... We have change meetings and we have stakeholders meetings, we can say it is monthly."</p> <p>Generally, my workshops if I could set up some front end and then we would just use our stakeholders plan and then move into the management of the stakeholders, to make sure that they brought along all the way through the project so no surprises at the end."</p>			
Sub-theme: Concerns and Actions (CA)			
Sub-theme: Stakeholders' Negotiation (SN)			
<p>"Most of the issue around here is about managing the change, so what we do firstly is have our change control process so that enables the contractors to raise what we call it early warning (it is something just about to happen) you then get in to a meeting to talk about what it is ... Then the contractor will close that out ... It is around using the processes having an open process environment, so you can just debate issues ... We have risk register, supplier of risk register ... We have regular risk meetings, risk meeting twice a month."</p>			

Sub-theme: Intensives (I)			
<p>“On the contract we make sure at the start of the project we got acquisition plan or acquisition strategy ... What the key drivers are for the project and cost quality and time and then you identify incentives in there ... We use NEC3 contract and we generally have target, price that we agree with our contractors, some of the consultants as well.”</p> <p>“We have something called (pain and gain), so if they deliver the project below target price then we going to share profits, if they deliver the project over the target price, they going to pay ... So, we might hold a risk of 50% going over budget and we might change plan.”</p> <p>“Actually it is probably only one thing we do not focus on it is trying to line individuals’ objectives ... It is always a team.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P7	Senior Project Manager – Capital Construction projects	Airside Segregation Project	01:05:57
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>“The stakeholders were various as I said because of the way the assets basically covered a lot of areas ... Property and retail and airlines obviously ... We had strategy that we would communicate proudly what we were planning and doing and then we would go down in details of talking to specific stakeholders while we are planning the works ... So we can get the understanding of what we are doing and their agreement about what we are planning and doing and if there is affected areas of this ... We make sure that we are still on track ... We would agree the more detail communication, so on a daily basis ... We had planned and we would make sure that we went and spoke to the people that we had agreed to speak to, and in certain cases we had agree to speak to them each night.”</p>			
Sub-theme: Project Information (PI)			
<p>“Through formal meetings, stakeholders meetings, or it was through emails ... The formal overall is big high level meetings ... To tell them specifically about things ... Then would be a quite high level once on coordination.”</p>			
Sub-theme: Stakeholders Meetings (SM)			
<p>“For that one yes, for the baggage, so the baggage manager was involve in site workshops.”</p>			
Sub-theme: Concerns and Actions (CA)			
<p>“Whenever it is possible and whenever we thought about it ... We let people know and we got their views, and we got their buy in to what we are doing.”</p>			
Sub-theme: Stakeholders’ Negotiation (SN)			
<p>“We consider risk ... There were a number of risks ... We put various risks in the project which if we are realize those risks then we obviously we would need to do some work to can track them, so we put risk into the project and then instruct the change in relation to that.”</p>			
Sub-theme: Intensives (I)			
<p>“I am a big fan of incentives but I am not allowed to do it on my own. It is a project course route and I think it is quite a good idea.”</p> <p>“We want to do it as quickly as possible ... So, that is a fear one to put an incentive on, really because otherwise why should they do it quickly or why they should do it cheaply.”</p> <p>“Sure for future business ... They actually know at the airport that, or at that time they definitely knew because we had frameworks and we use to framework.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P8	Senior Construction	Airfield Pavement Projects	01:16:36

	<i>Project manager – Leader of project Managers & Project Engineers within Airport Runways Projects</i>	<i>(Runway and Taxiway Refurbishments and Prefiguration)</i>	
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>“Our strategy obviously right on the beginning we identify who the stakeholders are ... You start developing who stakeholders going to be and talk to ... Then you gradually start that sort of dialogue just about technical leadership, technical standards to be on the work ... Then the operation guys in terms of when we can do these works, what resources do we need you to put in the project for us ... Then talking to security to get formal people coming through gates ... We talk also to property because we need areas of the airport to build temporary our site facilities on, site offices and storages.”</p> <p>“So, we have got the stakeholders management plan, map of who the stakeholders are, who the individuals are, why you want to talk to them, put all that together ... Then we get into more details about the project, you get closer to the start date, we know the programme that going to be, we know what is the work that going to be, here is our workers, where we going to put the compound ... Then we have other couple of big stakeholders’ information sessions, to get all stakeholders in, that will be day or half day session.”</p>			
Sub-theme: Project Information (PI)			
Sub-theme: Stakeholders Meetings (SM)			
<p>“We set various workshops and get them do some brainstorming to get them ready spend a bit time thinking about the project and how it may that affect them and to their concerns in, what they are worried about, because we cannot think of everything.”</p> <p>“Generally we did it a couple of times in the six months before we started ... It was a day or half day sessions ... They are quite a big thing to sort of set out and have 60 -70 people ... You go through then the project, key stakeholders are the airside operation team ... We meet with them every week and at some levels of the project we meet the guys every day ... Then once a week with some other guys in the operation team ... These are the key stakeholders.”</p> <p>“Then all the other people we will meet more on ad hoc basis, just when we need to meet and talk to other people ... Then we meet with the other very particular stakeholders, some of the services people, have them when we need to do their bit of work ... Depending on what the stakeholder is and how important he is we decide how often we meet with them.”</p>			
Sub-theme: Concerns and Actions (CA)			
<p>“In those meeting what we trying to do ... We try to show them what we going to build ... We then try to encourage them to ask questions and feedback what their concerns on ... Things are quite difficult, so we did several sessions ... We were broke up into groups and said come back with your risks that you thinking over about and then we collect that and send that information ... Just one of the challenges is to when you get the stakeholders together and take them to talk rather than just being there and listen.”</p>			
Sub-theme: Stakeholders’ Negotiation (SN)			
<p>“It depends what it is ... If you consider bad weather, If it what we called fuzzy condition, a lot of low clouds and fogs ... Not safe and we cannot give the contractor the runway, you cannot cross the taxi way, we cannot let you go to work ... In that instance we pay the contractor, we paying the cost of all those people standing and not doing anything.”</p> <p>“If it is just raining, so it is not a fuzzy condition it is just raining, so the operation team says ‘you can use the taxi way and you can go to work’ but the contractor says ‘it is raining so I cannot do my work’ that is his cost, so I did not pay that cost.”</p> <p>“So, with all these elements it is very important understanding what is writing in the contract about what I pay for and what he pay for.”</p> <p>“In our environment very often you can pay money but cannot give any time, so that then comes</p>			

down to negotiation about, how can you save that time and how much it going to cost ... We do have money but we do not have many time."			
Sub-theme: Intensives (I)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P9	Senior Construction Project Manager – (leader of Project Managers (Security and Saving Operational Cost)	Terminals Security Project: Security Equipment in the Passenger Security Areas	01:43:20
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>"You are delivering something for stakeholders ... The stakeholder in this project really is terminal operation, so I am delivering it for them ... A lot of project deliverables or expectations ... Stakeholders engagement is between me and the terminal and a lot of it is around shaping them up to speed or updated with what is coming next to the project ... now we are delivering a lot of it is around breaking down the schedule in terms of what are we doing tonight, what are we doing tomorrow night, what are we doing next week and next month ... I think a lot of , I am keep them updated as they need to be updated ... It is extreme but there are different stakeholders have different expectations from me in terms of what information I give them ... In terms of working successfully what my key roles is to quickly grasp how much info I need to give to each stakeholder, that is during the delivery and the implementation phase."</p> <p>"Key stakeholders change obviously in a different project stages generally ... At the initiation stage, the terminal probably would not be interested because it is so far down the line from delivering ... Stakeholders engagement is key because if the engagement is not the key the project won't go in that list ... Stakeholders differ at different stages it is through the lifecycle ... I am in the implementation I do not have any dealing with the CIA because the project has been agreed right back here, what I am doing now it is delivering it ... The key stakeholders now are the people in the terminal who are going to be using it ultimately, keeping them up to speed as I said with the schedule and what we are doing."</p> <p>"In terms of their interests and their influence, part of the business case or one of the sections in the business case or the project management plan is specifically link to listing the stakeholders and assessing their interests and their influences ... That would differ as the project goes through."</p> <p>"We have as part of that (X) and (Y) matrix in the same document at the beginning of the project but and also there is a live document as you go through, we have a stakeholders list ... I would make a list of all the people I thought they are interested or needed to be spoken to ... In terms of the team below them, it will be their job probably then speak to the team below them."</p> <p>"The importance of a stakeholder will change through the life cycle of the project ... Just because they are not the key one at any particular point, I think it is important to realize they might still be interested in what is going on ... That is generally sort of that monthly form where airlines, control authorities, terminals' operations, facilities team set at the same table."</p>			
Sub-theme: Project Information (PI)			
Sub-theme: Stakeholders Meetings (SM)			
Sub-theme: Concerns and Actions (CA)			
"If possible yes ... But generally because I have my weekly progress meetings with the construction team, I also have one with cost, risk and schedule but in that weekly progress			

meeting with the construction team, the terminal operation are also encouraged to attend ... Each terminal will generally have somebody on the operation team who has been assigned to this project who is my point of contact, I will meet them on a weekly basis ... Even if they have not raised issues in advanced, it is not going to be long before they raise it because I have got a meeting with them that week ... If they have got an issue they say 'coming' or if it just happened they phone me ... If I have got an issue in terms of I cannot deliver something when I have said I was going to deliver it, I call them when."

Sub-theme: Stakeholders' Negotiation (SN)

"All done generally through the SEMAR ... The contract change system, so that deals with scope changes, cost changes, risk has been discovered ... It is an ongoing system, a life system, it is used by me every two weeks in my commercial meeting with the contractor ... It is generally the SENMAR contract change stuff gets resolved on an ongoing basis ... It would be assess by me to whether I think it is valid claim for additional time or additional money, it will then go to the contract officer for the ultimate checking the box and then it will get added, formally added, to the scope of (..) and (..) the contractor. They have got the original scope which they cost it, if there is something extra it will be assessed and then will be added in."

Sub-theme: Intensives (I)

"That is normally set up right at the beginning when the contract has signed ... Speaking to the contractor, overall there is no general incentive ... Some projects do have it where if I deliver a month early they given a percentage or a lamp sum as an incentive."

"You could consider very much the long term relation as an incentive for contractors, especially at the airport ... If they perform well in (..) this project which they are at the moment I am likely to recommend them for the next project defiantly ... If they perform badly they know their chances is getting the next bit piece of work are less."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P10</i>	<i>Senior Construction Project Manager – Programme Director of Terminals Projects</i>	<i>Totally New Terminal</i>	<i>02:24:06</i>

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

"All of this has to be supported by good project management ... But that why I have blues, who like writing these things ... We have got a stakeholders management plan ... Stakeholders' management plan moves around all the time, you must keep it updated ... You must think about a new interest which come to that stakeholders management plan as well ... And there are different stakeholders of different time of the project, inception, through implementation, had over as well ... I have got a great team and I have got somebody who do all the airside side of things ... I have got (..) an individual who is dealing with the logistic ... I have got big team but it is all covered ... One for the airlines and all that sort of stuff ... The other keep in the site going ... The other one is about the project externally ... The other one internally to make the project work ... I am responsible for stakeholders here ... I deal with the high level, but I have a team that deal with it as well ... Because I own the project, I own how we get through the project ... I am accountable for that, I actually take it and make sure that all the stakeholders are involve with it ... I make sure it delivered for all stakeholders and then the programme director comes in and receive the benefits."

"It is in the process ... Who the stakeholders are, stakeholders' management plan ... You got to have through pretty much every stage ... It is in the process, you cannot get through ... we have to share who are the stakeholders that have been engaged ... We have to demonstrate that in the regulation."

Sub-theme: Project Information (PI)

"We have so many reports ... We have the MPR which is about 8 pages of data ... Information all there visible it got the visibility goes to the airlines ... All the project information, it has got all the risk, the spent profile, the predicted, it has the schedule forms index, cost form index, full page on safety ... It has got how we are doing with the business plan, how we are doing on spend for targets, how we are doing for risk ... We got key issues and concerns, we have got quality, key schedule issues, we draw down the risk ... MSP (Management Service Providers) have been doing that for me

"The dashboard is held by PMO (Project Management Office) and I get template to fill in and it goes there ... Information is open and transparent."

"We have stakeholders assessment ... We know who is up there and we know down there ... We know that we need to get handle on them and we know when we have to go and talk to them ... We have got stakeholders' management plan, which is in there ... There is something I do with the team to put posted notes on who and where people are ... That is a workshop, I want to find out who is the key people are."

Sub-theme: Stakeholders Meetings (SM)

"We just do workshop right at the start."

"There are three levels of meetings ... I have got something which is the MPR (Management Programme Review) the top level, monthly ... I have got a weekly at programme level ... I have got a weekly at project level ... That is with my boss and everybody else who is a project manager, project directors all together, strategic."

Sub-theme: Concerns and Actions (CA)

Sub-theme: Stakeholders' Negotiation (SN)

"We have not got any claims ... I have stopped change so I do not allow change, we will do it later ... If it is wrong we will do it later ... I make sure that my team every single week I say 'you are the client, you are not verbally instruct anything, everything has to go through (..) an assigned individual ... It is creative real process to go through ... They have no authority to do change on site and it is frees them up ... My life a lot easy now ... I recommend people trying that."

Sub-theme: Incentives (I)

"Incentives we have something called an award fee which is a separate part ... You have got a project cost ... I hold a 5-10 million in there to actually say 'do you know if you work well with me and you hit some KPIs', so key dates, so 50% I will give you a million pound every three months ... The next if you work well with me collaboratively ... If you keep your safety and quality above 95%, so I link them in with my success contractually and basically it is million pound 'well done' ... and you find their behaviors to me towards the end of the first quarter ... I pay money for good behaviors."

One other thing on incentives, I found towards the end as well, this is really key learning ... Sometimes it is about creating an event ... I have created so many hoc events ... We have this big thing for a really senior person from the government coming along ... The milestones which are about events hold more weight than money to individuals because they do not see that money, the company make that money ... They see personal shaking hands 'well done, you hit it', 'you worked through the weekend' ... There is a lesson learn I have got on that."

Context

Organization 2: Public Airport Operator

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P1</i>	<i>Deputy Construction Project Director/Project</i>	<i>Totally New Airport</i>	<i>01:35:30</i>

	Control Manager		
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
Sub-theme: Project Information (PI)			
Sub-theme: Stakeholders Meetings (SM)			
Sub-theme: Concerns and Actions (CA)			
Sub-theme: Stakeholders' Negotiation (SN)			
Sub-theme: Intensives (I)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P2	Head of structural engineering department	Private Aviation Terminal Project	01:21:25
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
"Within our teamwork we chose a person to coordinate with stakeholders and once he catch all the information from them we set together and resolve it ... From time to time I do have meetings with stakeholders and they come to us and we resolve it according to their requirement, but we cannot do it because that might be conflict with other stakeholders ... Allocation of the offices because there are two stakeholders like (..) and (..) private aviation organizations, they have conflict ... And in that respect I ask upper management to help me out to get the job done."			
"We seek help from expertise from other disciplines as well ... they help us out, e.g., runways, taxi ways, aprons, the approach that has to be taken care from other disciplines as well ... It is one of our major responsibilities to do coordination ... It is initiative from us as well and it is requested from us too."			
Sub-theme: Project Information (PI)			
"In that project at that time mostly we have letters communication actually, and has to be documented as well and kind of circulations CC to other disciplines as well because there was a kind of system. At that particular time 15 years ago we wanted to have certain documentation, the contractor should be aware of it, stakeholders should be aware of it, we should have it. So, we had a document control department (DCD) and they take care of it, and it has to go through them, sign it and just go for it."			
"It does happen sometimes but not all the time ... Again allocation of the area, bringing two stakeholders, and (..) The major airline was involved as well to insure that we are on the right path, because they have to coordinate with the (..) major airlines' people to get the airplanes and also planning to park in apron areas."			
"Aviation is independent autonomous body actually, this is their project, but since they are building in our airport they come to seek support like a tenant ... We help them out in doing all of that... Eventually, it will be handed over to airport, the tenant."			
Sub-theme: Stakeholders Meetings (SM)			
"Of course we do had a lot of meeting with the contractor as well, once he collect the whole information then we call them for a meeting and we take care of it."			

"We have a schedule meeting every week ... We have once a week a meeting for completion all the tasks and everything ... Every day we do have in-house one hour meeting then we invite the contractor to come and set with us and we ask him if he have any problem, submittals to us, then we review it and send it back to them ... Once you have a good contractor and you have a good designer, things are comfortable."

Sub-theme: Concerns and Actions (CA)

"In design problem we call the contractor ... 'This is the problem and you cannot proceed until you resolve it' ... We give them the solutions but will not propose the solution ... We ask them to go back and propose the solution to us, this is one of the major critical point in construction management ... Never ever propose, you can discuss unofficially with the contractor and tell them go back and propose to us, we cannot propose officially ... Once they propose it they should not blame later 'oh you'."

"Actions take time ... Stop it for day or two then resolve it and give it back to us and then we give the approval, once the contractor get the approval he can proceed with the work."

"This is what we call it in-house site memos, which are also official ... It is within parties involved in site and sign it also ... They send it to us and we give the approval or the solution or what has proposed to us, then what is consider comfortable we take the action."

Sub-theme: Stakeholders' Negotiation (SN)

"Most of the time contractors looking for time, and cost time to them ... We have it very careful, one of the thing is that never propose, let them come forward ... Be a team, we have to help the contractor at the same time but unofficially, no minutes of meetings and never documented ... Because every week we do have a meeting with the contractor officially, and that is called minutes of the meeting once a week ... That is their proposal and we are looking to that part. Then they cannot claim for extra, because that is their problem not us."

"We say to them unofficially to follow that direction, see the best and you then decide not us, then you come to us. We give the help technically and it may be cost more to them or less, then we assess the whole situation to make sure the things are right or not ... If there are some changes from the client and we about to take care of it, then they have the claim ... Then we get the approval."

Sub-theme: Intensives (I)

"Every year our (...) organization management has evaluation for every individual ... One of my team member has promoted ... Once they know management knows that they are working hard and the job successfully done, it is a big success to them as well."

"In terms of other stakeholders 'thank you very much, you have done the job for us, we are appreciated', and sometimes they give certifications to management and us as well."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P3	Senior Project Manager - Leader of Project Managers & Engineers (Civil, Structural & Pavement)	Runways Development of a New Airport - Airfield Projects	01:18:19

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

"We have officially requested from the airport management/administration to assign a person with adequate knowledge of all airport departments, operation, maintenance, engineering and storages and has good communication skills so he can coordinate with us ... They assigned an individual/coordination ... This guy was so professional, he was from the (...) an external airport management firm, which is developing (...) two international airports in the country ... Actually (...) the external body came here to develop various aspects of the airport, but we have not got

relation within our department on the mechanism of that ... Our relation with the guy is to facilitate and coordinate our project."			
Sub-theme: Project Information (PI)			
<p>"It was electronically-based to accelerate the process ... As a government organization we rely on letter communication at the first place ... Sometimes, we receive project drawings by emails for review in order to just not delay the project ... This was one of the things that made the project success and minimized delay time."</p> <p>"This project is design and build form of contract, most of the previous projects the design was already there ... In this one, we developed the conceptual design prior involving a designer ... the designer who is from the contractor side received our initial design, completed and make any notes, send it back to us to review it and make our comments and approval before the contractor get the final version."</p> <p>"We decided project different parties early, I mean our heads of department and the project director based on our experiences form previous projects."</p>			
Sub-theme: Stakeholders Meetings (SM)			
<p>"We had weekly meetings, one day a week ... Project director, his assistant manager and heads of departments were attended ... Other meetings every two weeks with the contractor and his team, his project manager, project coordination, and the key person ... We meet with (..) the external body team, our coordinator, usually when needed ... We have assigned an individual from our team to attend airport management/administration's weekly meetings ... In case they have an enquiry about project progress, so we can be up to date and easily manage our communication."</p>			
Sub-theme: Concerns and Actions (CA)			
<p>"So fast unless they associate with financial matters ... A huge additional cost while small amount were easy to proceed."</p>			
Sub-theme: Stakeholders' Negotiation (SN)			
<p>"We have not got claims so far."</p> <p>"The project admiration or (..) the public operator was so flexible to pay extra cost with this regards ... "Actually we had so many negotiations with the air force before ending up with this solution, as we had offered them different options, but they preferred that."</p>			
Sub-theme: Intensives (I)			
<p>"No not really."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P4	General Director of Engineering Affairs - Domestic Airports	Airfield Development Project – Domestic Airport	01:14:21
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>"The selection process of consultants and contractors under the supervision of particular committee (offers inspection committee) ... At the top of this committee is (..) the public operator's president and also members from different departments, executive, contract, legal and so on."</p> <p>"We have a particular form to be filled after completing the project ... During the project we just monitor their performance in terms of completing their tasks on time, issues and problems occurred, quality of works."</p> <p>"In terms of developing their skills, one of our requirements is to ask them to have team members combine specific individuals, penalties and fines would be applied if not."</p>			
Sub-theme: Project Information (PI)			

“In the weekly meetings we discuss all aspects, achievements, delays, issues and any related.”			
Sub-theme: Stakeholders Meetings (SM)			
“We had meetings every week with all project stakeholders ... The contractor and consultant had daily meetings arrangements between them ... Me as a project manager, my team, the contractor and the consultant ... Otherwise when needed we ask for a meeting with people involve in that.”			
Sub-theme: Concerns and Actions (CA)			
“Everything was happening straightaway ... All decision actions were on time ... So, we managed to finish on time.”			
“Based on disciplines and specialties ... Within my team I meet with whoever involved in the issue and we discuss and share ideas and thoughts.”			
“The changes that happened in the overall structure of (..) the public operator, domestic and international airport separation not just on the name but even in the way of management and they become totally different department ... The process takes really much longer especially if related to both areas ... Now different departments do a full review process for the same request or letter ... Sometimes they make comments and send it back to us, so imagine how many departments do that ... There are few projects that should be completed in terms of time scale, but I am still working on their changes requests.”			
Sub-theme: Stakeholders' Negotiation (SN)			
“We have not experienced any claims in the project, this is because of the high level of transparency in the project between all parties ... Everything was clear to everybody.”			
Sub-theme: Intensives (I)			
“Actually we have not got this ... Just complement sometimes from managers.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P5	Senior Engineering Project Manager - Domestic Airports	Development of Seven Runways	01:28:10
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
“We set all together and discuss all problems and then every discipline concern with its issue and proposed its solutions ... Discipline's people meet with other stakeholders associated with the issue and feed me back later, I review then the outcomes and take decisions.”			
“At the beginning, I ask () to provide their experience along with all team members' information ... Any individual at site is not active ... I talk with him give him another chance, if the situation continue I ask whether the contractor or consultant for replacement ... At the end of the day you pay the price in time and quality.”			
Sub-theme: Project Information (PI)			
“We were using official letters ... Actions were based on what has written down contractually ... We still dealing with paper ... I like to deal with papers ... I know that is not the best method nowadays but I feel that papers are solid reference anytime.”			
“I was doing that besides my team where everyone focused on his specialty ... After selection all parties involved in the project, most importance is that the project manager of each organization.”			
Sub-theme: Stakeholders Meetings (SM)			
“Everyone if we discussing major issues ... If it concern with particular discipline, everyone invite but not necessary for irrelevant disciplines ... It is good to know a bit of everything, the language of other disciplines and to understand their basic knowledge ... Project managers is a must to be there.”			

“Sometimes you just get reports and no need to meet ... Sometimes you need to meet every week in a regular basis ... I had not got that much meetings.”

Sub-theme: Concerns and Actions (CA)

“It depends on the problems ... It should go into process and sometimes take times ... As we are dealing with different government departments, e.g., ministries, licenses, airport management, customs, you know, airport involve in so many different things ... It is not just based on you as a project manager, it needs some people and department approval.”

Sub-theme: Stakeholders' Negotiation (SN)

“We carry it as a project owner whether it is cost or time-related ... Otherwise, contractor or consultant going to handle it, if it related to their mistake or any delay they cause it ... But from the front target is to finish on time ... If there is any problem ... Squeeze our schedule and design a revised schedule for the remaining period to avoid delays and penalties.

“We set together and negotiate and we justify the reasons behind that ... It should be reasonable and satisfactory for the third parties who going to give us the approval for any additional requests ... We had not have any department for that ... It was based on our negotiations.”

Sub-theme: Intensives (I)

“When we finish the project we write a full report about the project in terms of contractor and consultant performance along with anyone involved ... We assess our own project team ... In our government department we have not got any incentives, even if you work over time ... Promotion for individuals which can be higher grade according to their performance and achievements ... I can just involve in individuals' assessment.”

“The contractor incentive is that if he done a great job he can award any of our following projects, and the consultant is exactly the same.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P6	Senior Project Manager – Communication & Control Systems	Totally New Airport Information Communication Technology of the New Airport	01:10:45

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

“I assigned a person from our side to coordinate this activity including our security people, so there was one guy who supposed to deal with, and I am always inform him that if we have meetings with site agencies or design consultant, he make arrangement for stakeholders to join.”

“We took these people also (..) out of the country to show them real practical demonstration. And we had about more than 20 government representatives, not from one discipline ... So, many different agencies ... How they are going to operate, what technology they going to use ... So, we told them and they are happy.”

Sub-theme: Project Information (PI)

“The email as well as the official letter correspondences ... This is the protocol here, just the informal communication are sent by emails ... With the design consultant ... It is difficult to deal with the security, as you know those people are a bit old fashion ... it is not my decision it is an official requirement here.”

“Email works but with other people than security, we mostly relay on letter as an official requirement.”

“I do not think we have this thing here, it is something advanced.”

Sub-theme: Stakeholders Meetings (SM)

“We have several workshop arrangements, many workshops as I explained early and we always

have workshops.”

“We have regular weekly meetings ... To review the progress and what delivery have been made ... Minutes of meetings are prepared ... From (..) the public operator side we have 2 -3 people, my colleagues will be there plus the subcontractor, the contractor and the IT department.”

Sub-theme: Concerns and Actions (CA)

“It was a very fast track project, we had problems e.g., with security ... Sometimes they do not allow you to go to the site ... Sometimes gates are closed, so delay in getting access to the site.”
Due to the culture here, e.g., they inform us that a royal flight will arrive 7:30 am, they closed the west runway half an hour before that, but it did not arrive, and then every half an hour we informed that it will come, until 12 pm did not arrive ... You cannot consider it as a project management problem ... It is actually out of the whole project management control ... There are many other such types of problems.”

Sub-theme: Stakeholders' Negotiation (SN)

“Again this a cultural problems, the contractor supposed to finish his work in 4 years, but in fact he finished it in 7 years, not because of him but because of other contractor, and you can claim on that ... Project scope was very clear, if there is cost escalation then you can escalate.”

Sub-theme: Intensives (I)

“Actually we have nothing implemented in regards to incentives ... Good relations with external people have been developed ... No promotion or any type of incentives ... I refer this to cultural issue.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P7	Senior Project Manager - Deputy Project Director – New Airport Airfield Development Project Capital	Totally New Airport – Planning and Construction	01:10:42

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

“We say that we need somebody from this department or that department he manage both internal and external ... To coordinate with us ... We do that all the time and the same with the airport side.”

Sub-theme: Project Information (PI)

“Actually I use both emails and letters, but I rely more on emails ... Other teams they do not like it but I do ... Officially I use the electronic communication but the department head rely on letter communication ... We make it clear for stakeholders ... Correspondence will be by emails so they change it to email and we make sure we get the information.”

“Initially we had, but it was not successful ... Actually knowledge problem, people are not ready yet.”

Sub-theme: Stakeholders Meetings (SM)

“We have lots of meetings, especially at the initial stage ... We engage stakeholders from the beginning, the contractor actually in different stages ... One from the beginning just to collect data with us ... Then we ask the consultant or the contractor or the CM to meet again with all stakeholders to verify the information that we have collected to make sure that this requirement is achievable.”

“We still involve after that, I am the contractor client ... He has to report to me, he has to update me what is going on, we have to meet with stakeholders, he has some people who meet with stakeholders, and feed me back with a report whether weekly or monthly ... We send the report then to the right and relevant people ... Then we can resolve it and correct it and send it back to the contractor.”

“It is actually happening all the time ... Some meetings are pre-schedule and some meetings are

on call, when we find any difficulties or obstacles.”			
Sub-theme: Concerns and Actions (CA)			
“Some problem can be solved immediately ... Some problems have to be really considered carefully, because it might require different approval, not in our area, especially if it related to money ... Whatever in our authority we can do it, otherwise we have to reach different level and that is usually does not take that long.”			
Sub-theme: Stakeholders’ Negotiation (SN)			
“Sure there are, We negotiate and get the pricing from the contractor then ... We have share departments for that ... We have the contract department within our division ... We have a mix team who do auditing, contracting and legal aspect within our own department, I am not talking about the contract department of (..) the public operator, I am talking within our team.” “We do not rely on other departments, we rely on ourselves ... If we rely on ourselves we can achieve better results.”			
Sub-theme: Intensives (I)			
“The plan is there, sometime you do it and most of the time not for different reasons ... It has to be according to the contract, and we follow everything included in the contract.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P8	Senior Project Manager – Head of Civil Department	Totally New Airport - Airfield Facilities Upgrade Project	00:52:10
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
“Everything was directed by (..) departments’ head or through him ... If there is any external communication, the letter directed through him to other departments and we would have meetings to bring other people, like operation, security ... So, the communication started from the top.” “(..) the contractor was involve in it, so, we need them when we have fuel involve and there is a lot of safety issue ... We would be guided by them ... The people who we used to work in this project, they would approved the contractor.” “We do not have anything like that, stakeholders assessment”			
Sub-theme: Project Information (PI)			
“There was emails, the communication took form the verbal field instruction, verbal and written, then we communicate through emails ... Then in a monthly basis we would be writing a progress report and we used to get the progress report from the contractor.” “this was like a look back and look ahead ... look back to what was done in the last one month, look ahead is about what we expected.”			
Sub-theme: Stakeholders Meetings (SM)			
“If they were needed they were invited, otherwise not all of them.” “Actually we had both types of meeting.”			
Sub-theme: Concerns and Actions (CA)			
“We look back and we look ahead ... We make arrangements to meet with the contractor ... If there is an issue of closing runways or taxiways, we would meet with operation.” “Because of the criticality of the project, everybody was instructed to respond as fast as possible.”			
Sub-theme: Stakeholders’ Negotiation (SN)			
“Actually if it a monitory claim then we had our legal contract department to go and investigate that and close it.”			
Sub-theme: Intensives (I)			
“I wish there were but there were not.”			
Context			

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P9	Senior Project Manager – Head of Contract Control Department	Totally New Airport	01:16:52
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
“actually no, the 8 people I mentioned early where from 8 different disciplines and we really trust each of them and their skills, as they have good track records of successful project within (..) the public operator ... So, each one of those people where responsible to coordinate and select his own team.”			
Sub-theme: Project Information (PI)			
“(..) the public operator network was not mature enough ... All communication were based on written documents ... We started to rely on technology and most of our communications have changed ... With this regards, we did a great things when we dealt with external companies, actually we implemented in few old airports projects where that was not available in government projects ... We adopted a system called CIMS (Construction Information Management System) ... The contractor is responsible to feed the system with data ... The construction manager and (..) our organization have access to the system ... Actually we adopted in (..) another international airport ... Different complications with this regards indeed which did not support us to use it in here.”			
“In contracts structure itself, which is so important ... We have added framework and requirements in all different contracts whether, designer, construction manager or contractors ... We decided the level of people quality, and part of the assessment of any contractor before assigning the work ... the personnel and organization structure ... I need each candidate to show and explain his organization structure, so I can decide whether he satisfy my requirements or not ... So, what is happening, each discipline is supervising his related-activities in the project.”			
Sub-theme: Stakeholders Meetings (SM)			
“Atually we have scheduled time for workshops, as we have something called master project schedule for the project, which indicates all project activities including workshop arrangements. This is for every contract ... We tried also to acquire contractors trust by transparency ... What is between me and you is the evaluation criteria of constriction tendering ... As a contractor you are aware of evaluation process.”			
Sub-theme: Concerns and Actions (CA)			
Sub-theme: Stakeholders’ Negotiation (SN)			
“We are not involved any more and have other projects to supervise ... When we have a project, we plan it, make it prepared and then submit it to in-house department to supervise the project ... Contract’s matters were a key thing during developing projects plans, particularly, when we establish the scope of work and its conditions ... We tried to get contractors’ trust from our transparency value ... We added the evaluation criteria at tender early stages ... So, as a contractor you ensure how you going to be evaluated ... I also add very detailed descriptions of the project ... Sometimes contractor have some ambiguities in their proposals ... We have then a clarification meetings when contractors are nominated and their proposals reviewed ... So, they sign to complete any shortages ... In this stage I do not ask for any new thing, I just clarify what he did not, I put him back on scope track ... All tendering processes since the initiating stage of the project until the award stage are recorded (voice and video), meetings, clarification meetings proposal opening meetings.			
“Things that on contract and things that new ... If not, there is another procedures for that ... We bring three different prices form different companies ... And then the contract committee decide which one we chose ... We have not faced any in the project ... Just end users asked for extra			

things that based on existing items within the scope ... So changes requests were based on items that are part of project scope with known pricing lists, so we had not faced any issue on that."

Sub-theme: Intensives (I)

"If you deal professionally with project contactor and guide him properly in a way that you are support and help him, so automatically incentive will be there."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P10	Senior Project Manager – Head of Mechanical Department	Totally New Airport	01:16:52

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

"There was an individual who responsible for other stakeholders just during the early stages of evaluating project tenders ... Have not experienced more than that."

"Not at all, there is not any individual responsible for stakeholders' development activities."

Sub-theme: Project Information (PI)

"No official process for updating project information ... Information is available on request through the division of documents control."

Sub-theme: Stakeholders Meetings (SM)

"Workshop arrangements and regular meetings are not applied to the project ... However, meetings are scheduled upon request ... Members of each meeting are defined by whoever ask for the meeting."

Sub-theme: Concerns and Actions (CA)

"This could be informally in the verbal communication between stakeholders ... Indeed, some of the issues are already discussed in project scope."

"Actions depend on the type and the importance of each issue ... But, in case, of any issue it usually takes the needed time."

Sub-theme: Stakeholders' Negotiation (SN)

"I have not experienced any claim during my airport construction projects but all claims are associated with the risk management."

Sub-theme: Intensives (I)

"There is not any reward scheme is implemented and even for other stakeholders."

Context

Organization 3: Private and Public Airport Operator

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P1	Project CEO	Totally New Airport	01:35:30

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

"(..) the client team is not a big team just I and another senior engineer who coordinate and follow up the whole project, we are acting as a project manager besides the CEO."

"Actually, I am doing all coordination activities with different project stakeholders."

"This is under the joint venture team's (the contractor) responsibility as they in charge to select various sub-contractors ... But, for major aspects they have to get our approval and acceptance,

e.g the selection of major suppliers.”

Sub-theme: Project Information (PI)

“Mainly emails, but we are using letters of course for some official matters between us, (..) the owner and the joint venture contractor ... We must use letters in some cases to follow government procedures and regulations.”

“We are checking the monthly report and their performance according the construction schedule ... So we can realize where we have problem ... Then we draw their attention ... But we do not have assessment criteria to measure their performance.”

Sub-theme: Stakeholders Meetings (SM)

“We have monthly meetings with the contractor team, but sometime we have unscheduled meetings due to particular issues.”

“Actually, the contractor directors/PM (from both companies), the consultant and sometime (..) the owner people involve when needed.” We had those meeting regarding project design stage and now focusing on project progress and any updating information.”

Sub-theme: Concerns and Actions (CA)

“Due to the time importance I mentioned in the beginning, we are not allowing any impact on the project that affects project completion and its progress.”

“Mainly the government related matter take time ... We should wait until we get the approval from many organizations (ministry of transportation, police, and traffic control) ... In general, sometimes we tried to get some information (queries, approval) from official authorities but there is not clear structure or we do not know which department we should ask ... This may delay actions to take place ... Information that related to existing infrastructure or airport infrastructure (drawings, facts and figures).”

Sub-theme: Stakeholders' Negotiation (SN)

“Of course yes, the contractor likes to claim ... We are making the payment on time to the contractor but some time it is beyond our control ... This is due to the lenders (Banks) official process ... The contractor then claim for it ‘payment delay’.”

“In relation to that we are really trying hardly to avoid any impact on our project cost, time and future operation of the airport ... Our project is ahead of schedule.”

Sub-theme: Intensives (I)

“There is a bonus scheme for individuals at the end of each year based on performance evaluation ... We include this in the company policy ... We have to evaluate each individual performance and add points to his record during the year according to his attendance, performance, time punctuality, attitude, behaviors and his overall look.”

“This scheme has suggested by (..) the CM human resource department ... We created a similar scheme not 100% the same as it is should fit to our organizational culture but the idea came from them.”

“We have here ‘employee of the month’ for junior staff.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P2	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:37:37

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

“We have only few stakeholders ... (..) the client, (..) the consultant project manager, who hired by (..) the client but with limited power as they do not have the power to stop our process ... They just report to their client the status of the construction process and if there is any major issue we discuss it together.” ... They do not have much influence of us.

(..) the client organization is the main stakeholder ... With no much interference with the

construction ... Their concerns are mainly about project funding and work qualities; from time to time they visit the site and ask questions but without bothering us."

"The project lenders are also important stakeholder in the project, because they are funding the project ... We make sure they are always pleased about project progress ... From time to time one of them visits us and make random check on site, our reporting system ... They are almost there just to keep their eyes on us on making the project as scheduled."

"We are directly in touch with them (the lenders and the investor/client, Banks and the client), myself and project director ... In project control department there are cost engineers and planners directly connected to them ... Not for high level issues, just for getting approval, discussing project cash flow and gives the financial progress reports."

"Unfortunately we are not running such sessions ... I am planning to do that as I have just moved to this position about month ago ... We are not in a good shape regarding organizing presentation for stakeholders and our staff showing them where we are, what we are doing, what we are expecting from them."

Sub-theme: Project Information (PI)

"Within construction site and offices we are using all possible communication ways ... Mainly the email is the most important tool ... We have these smart phones and we use them to communicate between construction site and site office ... We totally depend on smart phones to communicate ... We communicate also through meetings every week ... Whenever there are some matters we set down and talk ... We do not communicate by memos, hard copies or thing like that. All our communications are electronic ... This makes life easy for us ... Even send them any photos (sketches), something to be done or someone ask about anything."

"Of course we use letter, but with our client and other stakeholders and we use hard copies ... But if you go to most offices you will not find files of anything like that."

"We have document software called (ACONEX) ... For this project and to keep its data and the whole records where you find anything you want we use (ACONEX) document control system."

Sub-theme: Stakeholders Meetings (SM)

"They are mostly for safety and quality ... Whenever we have new comer to project site we take them for training, and workshop (for all safety issue, what they may face in site and all possible scenario that can happen) ... We do not release any labor to site without having a certificate of having those courses ... When we bring people to the team we take the to a sort of orientation for about a week almost, we must concentrate very much on safety, project office environment ... They are mostly for employees, engineers and any new comers ... Any new comer to the site going to work in site offices, construction site or workshops must attend safety courses."

"We have only few schedule meetings ,, What I do not like about this project that we are not having much enough of weekly meetings ... This is honestly something we miss ... Meetings are usually held with subcontractors ... I criticize that lack of meetings among each other, I mean as department with project director and deputy project director ... Sometimes we have sort of individual meetings ... It is just when needed."

"Exactly the simplicity of our communication because of the joint venture as we all really care about the project .. I mean this something that we do for our own."

Sub-theme: Concerns and Actions (CA)

"Sure they are immediate as long as we are capable to do them."

Sub-theme: Stakeholders' Negotiation (SN)

"Yes we had some claims ... We claimed because of lenders delay ... When you submit an IPC and inter its payment, you except to get fund (cash it) in maximum of 30 days according to the contract ... Everything is clear in the contract, but sometimes if something we think it is not in the scope of work, we negotiate and then if we agree on sort of order or claim we go for a claim and they do not mind ... We had just financial claims not related to construction work as the scope is really clear."

Sub-theme: Intensives (I)

"We have started last month a very nice reward scheme for labor who complied with safety requirements on site ... Some rewards for labor who proved they complied with everything ... This made a very good encouragement for them ... Actually, we suffered from some labors working on site and not having their helmets and other equipment ... All guys reacted very well, and also we have started to give prizes (money) ... Every month we make an assessment and each labor proved that he had a good monthly record we give him the prize."

"This has proved rewarding is very successful scheme ... I have not seen any other reward apart from giving bonuses ... Every six months each company of the joint venture makes an assessment of their own staff, and then each company decided on the limited bones that we need to distributed to employees ... Actually, we share it 50/50 ... We have also appreciation but mostly it is based on money not promotions."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P3</i>	<i>Senior Project Manager – Leaders of Project Managers of IT Airport Construction Project</i>	<i>Totally New Airport</i>	<i>01:16:11</i>

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

"We start the design for this project we had no design for IT ... But what we had in our hand was the minimum technical requirement (MTR) ... For the IT, it is not very easy to find anybody from customers (stakeholders) and to have these meetings in order to get their information from ... That is way it was a difficult part for me, so I could not get any information in this project."

"I cannot find here people from IT government stakeholders, as they work in other major cities not in here ... That is way I just follow the information I have from MTR ... I was able to attend two meetings where I get their principles, requirements of what they want ... After getting those principles it was easy just to add them on the top of what we already have in design."

"We have it with our design manager here and he is responsible for stakeholders' arrangements, he is from (..) the CM or let me say (..) the joint venture team ... We have a representative from (..) the client who is responsible for the ORAT (Operational Readiness and Airport Transfer) ... Right now we are consulting or brainstorming with him to discuss and share with him some problems."

"Actually it is not one of our responsibilities ... Any kind of advanced technology not going to be from my side to them, they have to take care of that from inside their system ... What we are doing here is we are trying to achieve the high level of technology that is available to them."

Sub-theme: Project Information (PI)

"We use emails, but officially we have a document control system called ACONEX., which is the official correspondence system ... We use it just inside the project and the subcontractors ... But with (..) the client and (..) the owner only letters."

"I do not have direct relation with project stakeholders."

Sub-theme: Stakeholders Meetings (SM)

"We do not have regular internal meeting because we are working in the same space ... But with subcontractors we meet twice every week."

Sub-theme: Concerns and Actions (CA)

"Yes they are immediate actions ... We just have to wake up people and make them aware."

"I do not involve all project team in project solving process, because we need to use our time in a proper way ... Guys all of them have so many things to do and I do not want to keep them busy for something and they are not part of the solution."

Sub-theme: Stakeholders' Negotiation (SN)			
<p>"No not yet ... And I do not think we will have any claim ... We have a good contract."</p> <p>"You need to be tough and aware of every single detail of the contract and also have a good memory and write down everything ... You need to specify clearly your subcontractors' scope of work ... We are very good and I was here from the beginning and I can tell you that, subcontractors cannot get extra penny from us ... I like (..) the CM strategy about this they are really a good company."</p>			
Sub-theme: Intensives (I)			
<p>"Yes there is for joint venture project team, I am not sure if there is any for external people."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P4	Senior Project Manager - Quality Assurance & Control Manager	Totally New Airport	01:32:38
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>"We have different subcontractors and (..) the project consultant ... They are supporting the client and also us ... They help us to check site people and trying to find mistakes and damages on site for quality purpose ... But our main stakeholders are the subcontractors ... This is an airport project and it has to have other kind of things rather than other construction projects. We need to have specialized subcontractors ... The airport system and passenger boarding bridges ... We have many subcontractors in this project but the main ones are 40 to 45."</p> <p>"We ask subcontractors to form their own teams for quality control ... Then our team coordinate with package managers and subcontractors' people ... Which is easier to solve problems ... We are working as team ... If we cannot work as a team like coordinating with the package managers, subcontractors and all other disciplines, we cannot manage the project, it is not easy."</p> <p>"Yes we do development sessions ... Because of the system as this system is very new for most of the people, for me too ... I have learnt the system first and tried to teach others, I have started first by my people and then the package managers and subcontractors, this is not easy."</p>			
Sub-theme: Project Information (PI)			
<p>"We use emails and letters, but mostly emails ... And also our documentation system is an electronic system (ACONEX), which is very useful ... Otherwise we will lose many times and money of course, I do not like the use of paper ... Using ACONEX system to transfer documents between each other is very easy and very useful."</p> <p>"If they have some items that they cannot understand them we try to help and assist them and find the right solution for that ... We have also a form called certification of inspection and test (CIT), which means that after finishing the work this step will be in a week or after one month, all information regarding each step whether completed and checked or not, by whom (a subcontractor first and then the package manger) ... All these steps need assessment by us, otherwise they cannot be managed ... But (..) the client/users need to know and understand how the system work or they cannot do anything."</p>			
Sub-theme: Stakeholders Meetings (SM)			
<p>"Actually we do not have workshops ... We have in the project some workshops, involving subcontractors and (..) the joint venture contract management."</p> <p>"Meetings not for all people here ... Every week we have meeting with project departments and sometimes we have meeting with the external group or finishing group ... Monthly will be ok for</p>			

us but also if we need any we can do it directly, it depends if disciplines want to share anything ... We are also having internal meetings with package managers and subcontractors, sometimes every day ... We are always working together (with external) and if they have any problems they come to us or we go to them.”.

Sub-theme: Concerns and Actions (CA)

“We should do it immediately ... It is not just in this project it is in all projects ... It has to be done very quickly otherwise we cannot catch our target.”

Sub-theme: Stakeholders’ Negotiation (SN)

“We always receive claims but they are within the contract ... Negotiating is always good ... We need to follow the contract which is the rule of the project.”

Sub-theme: Intensives (I)

“Actually I like this way, if you can make the people happy you can get more and better performance ... For subcontractors, actually we are trying to give them some honors, certifications, special letters or something else.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P5	Senior Project Manager - Project Finance Manager	Totally New Airport	01:11:56

Intension

Theme C: Stakeholders Engagement (SE)

Sub-theme: Top-level Support (TS)

“No ... Actually all that under (..) the project manager organization’s responsibilities, as they are the PM.”

“So many advanced technologies ... All system have been upgraded in accordance with latest technologies, some systems were already obsolete in the market and we have proposed to the employer that those system are not anymore in operation or appropriate for the airport.”

Sub-theme: Project Information (PI)

“We used all method of communication, emails and letters ... But emails were the most dominated method.”

“Evaluation of project stakeholders’ status and positions is one of (..) the main contractor responsibilities.”

Sub-theme: Stakeholders Meetings (SM)

“Workshops were implemented through meetings, daily, weekly or special meetings.”

Sub-theme: Concerns and Actions (CA)

“In that project time was a great essence ... Time and quality were not tolerable under any circumstances.”

Sub-theme: Stakeholders’ Negotiation (SN)

“Of course we have many claims ... Basically, any claims out of the contract were based on negotiation process with main project stakeholders, project manager, design consultant and the employer ... I would say 70-75% we reached a conclusion via those negotiations ... And the rest were settled via the dispute review board (DRB) ... The majorities were solved through negotiations and meetings, and sometimes even without meetings ... Something that is very clear and obvious so they agree without any need for meetings ... The DRB were responsible for any technical and financial issues that could not be settled between us (main project stakeholders).”

Sub-theme: Intensives (I)

“We have nothing for external people ... Within (..) main contractor’s team we have incentives for personnel in cash form or certificates.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P6	Senior Quantity Surveyor	Totally New Airport	01:05:57

	Manager		
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>"This is should belong to project director."</p> <p>"Project departments' framework has developed to help and support everybody and everyone, from office boys until the project director, understands that we should deliver the project on time, quality and cost ... Departments' segmentation is to organize roles and responsibilities of each one ... It is actually depends on cases and work needs, sometimes we spend one week with contract department when there are so many contracts to be signed, in other cases I have to spend more time with project team when having visitors like lenders (banks) sometimes."</p> <p>"We have assigned a subcontractor and main consultant only for the handing over stage whether to communicate or to finalize the entire process ... As it is a new Airport project so the handing over will be really complicated ... The airport will be handed over as one package at the beginning and then divided into several divisions, baggage handling system, safety, fire system, IT system, and security and monitoring system ... Their role includes those segments manuals, communication and coordination process with different users and us too ... I do not think that they involve in stakeholders (users) development skills, instead they provide a comprehensive manual to be used in operation phase."</p>			
Sub-theme: Project Information (PI)			
<p>"We use emails in most of project communication internally and externally, and we do not use memos and letters, even this with project approval and different meetings, seminars and presentations' announcements."</p> <p>"We have an archive and actually we have a document control department which is responsible for that."</p> <p>"This is a mega project ... The entire project is divided into several packages and there is a head of each package, design, baggage handling system, structure, security system, IT and so on ... Then there is also a sub-head for each sub-package ... This is one of the difficulties and challenges that we were worry about it and raise it in advance ... Based on my experience in construction I was always concern about the coordination and communication."</p> <p>"We follow up, coordinate and also had many visits to abroad factories (lift system) and subcontractors, actually this make us, as a main partner on this project, confident and assured that we are paying the right people on the right time to get things on time."</p>			
Sub-theme: Stakeholders Meetings (SM)			
<p>"The workshop is mainly on a monthly basis with my team when having the closing of the month, I mostly focus on senior managers as I am depending on them."</p> <p>"We do not have frequent meetings but we arrange them when required ... Every six months we have a regular meeting to discuss general issues and by the end of each year we meet also officially to close the financial year."</p>			
Sub-theme: Concerns and Actions (CA)			
<p>"we do encourage issues to be raised in advance and immediate actions have taken ... I think this is the reason of project success so far."</p> <p>"Decision making process is related to power and authority ... We have here the right people at the right place with the right authority ... Without that you will never reach success."</p>			
Sub-theme: Stakeholders' Negotiation (SN)			
<p>"If it minor issues never claim for it ... But major issues we should claim for them, and it is based on study and evaluation conduct by project control and design people ... We then make an estimation of total cost following by an internal discussion of the reasonable margin that we expect ... In negotiating we still keep a margin with the client and finally the claim will be raised."</p> <p>"You know in construction business if it major matter I should claim for time extension ... If it</p>			

minor it usually resolve by additional cost ... Project claims can be regarding mechanical, electrical or construction.”			
Sub-theme: Intensives (I)			
“Yes of course there is incentives ... We have used this way in different methods ... We pay (..) the subcontractor early and reduce the credit facility period in order to make a big jump and push for him.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P7	Senior Project Manager - Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
“I am responsible for that ... I see and check contract agreements every day ... Coordinate with the person on site who is in charge with subcontractors’ activities.”			
Sub-theme: Project Information (PI)			
“Actually we use both emails and verbal method.”			
“We use a document control system called ACONEX.”			
Sub-theme: Stakeholders Meetings (SM)			
“All departments I think like workshops ... We are working together very good now ... If I see a need for a meeting I will do and arrange it, otherwise no.”			
Sub-theme: Concerns and Actions (CA)			
“Until now we have not experienced this.”			
Sub-theme: Stakeholders’ Negotiation (SN)			
“Yes there is ... We have the contract department I directly send it to them and they deal with it.”			
Sub-theme: Intensives (I)			
“We just have the bonus scheme.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P8	Senior Project Manager – Health Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
“We have stakeholders’ representative and he is from (..) the owner side ... He is the safety leader of safety department.			
“(..) the owner is following a standard of a an international based company called (..) and they are enforcing the same thing to here as well ... They are a highly key skilled safety consultant for everybody.”			
Sub-theme: Project Information (PI)			
“Mostly we have a document control and sharing system called ACONEX and we use it for all information related.”			
Sub-theme: Stakeholders Meetings (SM)			
“Additional to monthly meeting arrangements, we have workshops ... This included within the training department ... Training department provides anyone involve in the site with training, not necessary just from the joint venture team.”			
Sub-theme: Concerns and Actions (CA)			
“If an accident happened on site and the injury in there then it is an immediate action is			

required ... We categorized this into 3 or 4 groups like low, medium, high ... If there is a high risky activity the remedy action will be immediate effect."			
Sub-theme: Stakeholders' Negotiation (SN)			
"At the begging of the contract itself, subcontractors are agreed to follow our safety standard ... If there is any valuation there we will claim to them and they will not claim to us."			
Sub-theme: Intensives (I)			
<p>"Intensive is clearly official ... It is an initiative by the project manager."</p> <p>"If one contractor is complaining with most of our standard ... We are then selecting that contractor as the contractor of the month ... If one man is always comply with full safety equipment, following the rules and set a good example for others, defiantly we will reward him with a certificate in front of the all high management with good money too."</p> <p>"We have our people on site, they are giving daily reports on individuals."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P9	Senior Project Manager – Design Project Manager	Totally New Airport	01:15:37
Intension			
Theme C: Stakeholders Engagement (SE)			
Sub-theme: Top-level Support (TS)			
<p>"The client/owner gave us a booklet that contains every stakeholder needs and requirements, standard of international or domestic airport and all other related ... When we finished the concept design before we lock the design stage, we invited all stakeholders for group meeting and explained the status of the project and its design, this is in the present of (..) the owner and client, and then we split into individual meetings with every stakeholder and explained everything including his areas, rooms, requirements and so on .. This is not easy because everyone wants more rooms, facilities, to control cameras and so many ... Our role was to meet with each one of them and start looking to the gaps and close them, whether by refusing what is extra, and of course we communicate with (..) the owner because it will be a real cost affect ... Many times we comply with the requirements because we have the right to do ... This is the way, it is a regular meeting, communication with them and feedback from project stakeholders then we release the final design ... But actually the final role is from (..) the owner side.</p>			
Sub-theme: Project Information (PI)			
<p>"All top management level and CEO from all companies can access our airport document control system ACONEX, the client but not the stakeholders ... I mean external stakeholders ... But all designer, sub-designers, contractors and sub-contractors are using ACONEX ... Everyone has an access of what he needs to see, and we control the access ... I am the only person who control the access to whether (..) the owner, the consultant ... This is in order to know what we send and then control it."</p> <p>"The client can communicate with project stakeholders, as we are not communicating with them directly ... I am not communicating directly with custom, this is through (..) the client who is he partner of (..) the owner in this project and then they will communicate with (..) the owner and he will write to stakeholders, all that is by using letter system."</p>			
Sub-theme: Stakeholders Meetings (SM)			
<p>"During stage C we had weekly meetings, in stage D we reduced meetings to fortnightly or sometimes every three weeks ... Then we come to the details design stages (E and F), meetings become almost every month ... The real workshop meetings were in stage C and D."</p>			
Sub-theme: Concerns and Actions (CA)			
<p>"Normally they are not taking time ... For us we take immediate action ... But sometimes there is priority, if there is any issue we prioritize it, and then some of them we deal with them immediately and some others we delay them as they are not affecting our schedule."</p> <p>"Here we are taking quicker action ... Because we were involve in the design, so we can take immediate action and contact the designer and change some elements or advice all parties that</p>			

we need to change this ... We are the designer and I think it is much easier that you have external party designer where you have to communicate with him and wait for his reply and study, it is in-house design.”

Sub-theme: Stakeholders' Negotiation (SN)

“Claims will be analyzed and assessed, and if they have a really clear reasons they will get it.”

Sub-theme: Intensives (I)

“There is financial incentives and some morale incentives, trip to (..) a country for stuff when they finish or achieve something ... Some time they are sending them for meetings as they have to feel their importance.”

“As a design we do not have such incentives for external people ... Sub-designers or designers the best incentive for them is to give them your second project, a future relation ... They were all targeting to deliver the current project in a good way to get the other one.”

12.2 Theme C: Stakeholders' Engagement - Data Interpretation

12.2.1 Organisation 1 – Private Ownership Structure

O1 has a very structured and organised stakeholders management process (O1P1). Senior project managers are responsible for managing stakeholders-related activities (O1P4, O1P5, O1P9 and O1P10). All project managers engage with all stakeholders through various weekly and monthly meetings whether informally or less formally (O1P1, O1P2, O1P3, O1P4, O1P5, O1P6, O1P7, O1P8, O1P9 and O1P10). They follow their organisation's regulations in dealing with these stakeholders and also developing different plans to ensure a proper engagement process (O1P6, O1P7 and O1P10). O1P2 observed that a "huge number of people that need to be engaged." Indeed, most of O1's senior project managers mentioned the large number of project stakeholders. They noted: "even on a very small project, the stakeholders are a burden and vast"; there are "lots of stakeholders and definitely there is a potential for conflict"; "it is a bit of public relation project"; and "the stakeholders were various" (O1P3, O1P4, O1P5 and O1P7, respectively). Key stakeholders are organised in different categories, whether control authority, property and facility, operation, commercial, contractors or suppliers (O1P3, O1P5, O1P8 and O1P9). The main project stakeholders are those who have the largest stake in the organisation and the biggest input in the decision-making process (O1P1). According to O1P9 and O1P10, the importance of project stakeholders changes through a project's different stages. O1 have specialist stakeholder consultants, and it is their decision who should be invited and when (O1P1, O1P2 and O1P3). A matrix approach is in place to determine each stakeholder interest and influence the project (O1P6 and O1P9). O1P1 suggested that "the successful stakeholders' engagement in this particular instance is quickly grasping what each stakeholder wants to know to be satisfied", as they have many requirements and inputs in the decision-making processes.

Emails, official regular meetings and workshops and face-to-face conversations are utilised to share project information with stakeholders (O1P3 and O1P7). However, in terms of the amount of information that needs to be shared, this is based on assessment criteria that measure their influence, what is required from them and engagement methods (O1P2 and O1P10). Additionally, a change control process is also implemented to coordinate and discuss all change requirements and associated matters with stakeholders (O1P6).

Meetings and workshops involving both internal and external stakeholders are arranged in each project. Their frequency and stakeholder involvement vary based on the nature of the project, phase and key stakeholders. There is also a key representative of each project party (O1P1 and O1P8). O1P2 stated that stakeholder meetings and workshops are updated throughout a project's lifecycle. Most of these meetings are held during early project stages, the initiating stage (O1P10).

In O1 all negotiations between parties are based on NEC3 contract, which manages all project scope changes with regard to time extension, cost increase and expectations (O1P1, O1P4 and O1P6). In this regard, a contract change system, SIMAR, which is a web-based tool, allowing all parties access, is supporting the entire process. All these procedures are managed by MSP people, but the senior project manager is in charge of making decisions (O1P3). He also commented: "I have not been in a situation where I have been in a dispute with a contractor, because we work with framework companies and so we tend to have reasonably good relationship with them." On the other hand, O1P10 has stopped change in a project scope and has not experienced any claims.

O1P2 mentioned that through project workshops all stakeholders' concerns, including contractors, are discussed in group meetings, so they can ensure everyone receives the same message. In the project's early stages, O1P3 started to discuss project issues with a senior manager who had influence and authority to decide or speak on behalf of particular business areas. Following this, the number of key people increased. During these sessions, a project manager tried to explain all project dimensions in terms of what needed to be done and what was going to be built, in order to encourage people to ask questions and feedback their concerns. However, over the project cycle O1P9 had various weekly progress meetings with different key project stakeholders, to discuss various issues.

The following Table 11.1 illustrates how project managers deal with stakeholders' incentives.

Table 11.1: *Organisation 1 Project Stakeholders' Incentives*

Sub-theme: Project Team Efficiency	
Participant	Response
O1P1	For contractors and some consultants and suppliers: -Pain and gain to make sure they deliver under budget. For individuals:

	<ul style="list-style-type: none"> - Yearly performance assessment and a performance related bonus ... Top, above average, middle or low ground, their bonus is proportional on where they fit on that curves. -The airport star scheme I nominate them for doing a very good job ... softer rewards ... financial benefits ... vouchers.
<i>O1P2</i>	For contractors and some consultants and suppliers: -Pain and gain relationship ... If they delivered certain capacity by such and such day they are entailed to 25% of a bonus ... If they achieve full capacity that we need it by another date again they will entailed to a 100% of their assets, it worked very well.
<i>O1P3</i>	- If they finish early then they should save some money.
<i>O1P4</i>	
<i>O1P5</i>	For contractors and some consultants and suppliers: - If they hit the deadline they got a bonus.
<i>O1P6</i>	For contractors and some consultants and suppliers: -Pain and gain ... If they deliver the project below target price then we going to share profits, if they deliver the project over the target price, they going to pay.
<i>O1P7</i>	-It is a project course route ... We want to do it as quickly as possible.
<i>O1P8</i>	
<i>O1P9</i>	-Very much the long term relation as an incentive for contractors, especially at the airport ... If they perform well in (..) this project ... I am likely to recommend them for the next project defiantly.
<i>O1P10</i>	For contractors and some consultants and suppliers: - I pay money for good behaviours. For individuals: -Personal shaking hands 'well done, you hit it'.

12.2.2 Organisation 2 - Public Ownership Structure

Stakeholders' engagement activity in O2 is managed through a coordinator assigned by either the airport administration or senior project manager and his project team (O2P1, O2P2, O2P3, O2P6 and O2P10). This coordinator can be an internal or external individual, who works with a company involved in developing various aspects of a country's airports. However, O2P5 and O2P7 project experiences were different; stakeholders' activities were managed through various representatives of different project disciplines and then reported to a project manager. In some projects, each department head is responsible for stakeholders' coordination activities, so all activities are directed by them through project managers (O2P8 and O2P9).

Stakeholders' relevant skills were considered in just one project experience (O2P6). Various people from airport operation and government agencies had a practical demonstration, outside of the country, regarding advanced technologies that were to be implemented in the new airport. However, all other senior project managers required external parties to have skilled and competent team members, which is one of the contract agreements.

In the majority of O2 projects, letter is the main tool utilised to share or update information with project stakeholders, otherwise new information is discussed during a project's weekly meetings (O2P2, O2P4 and O2P5). In this regard, O2P5 stated "I know that is not the best method nowadays." O2P6 and O2P8 clarified that only informal correspondences can be sent by email. However, O2P3 and O2P7 used email correspondence with project stakeholders. O2P3 remarked: "this was one of the things that made the project a success and minimised delay time." For O2P10, there is no official process for updating project information; rather, information is available on request through DCC (Document Control Centre).

There are various meeting arrangements in O2. O2P2 had daily meetings, for one hour, with the in-house project team and then the project contractor was invited to discuss any issue, and weekly meetings consisting of both. In O2P3's chosen project, the in-house project team had a scheduled meeting once a week. Another meeting arrangement was organised on a fortnightly basis. O2P3 and O2P6 had weekly meetings with a project contractor and consultant. O2P7 mentioned that many meetings with project stakeholders were organised during the initial stage. Regular meetings and workshops were not arranged in the O2P10 project; meetings were held when needed. However, O2P6 experienced numerous workshops in his project experience.

O1P4 and O1P8 mentioned that if an issue arises regarding scope changes, the project team arrange a meeting with the contractor and whoever else is involved to discuss and share ideas. However, O2P2 stated, "we give them the solutions but will not propose the solution, we ask them to go back and propose the solution to us, you can discuss unofficially with the contractor, but we cannot propose officially."

Actions usually take time in O2, especially if an issue is associated with financial matter, as it requires different reviews from internal departments and external government departments (O2P2, O2P4 and O2P5). Most actions delays are outside of project management control

(OP26). However, O2P8 commented, “because of the criticality of the project, everybody was instructed to respond as fast as possible.”

A project claim in O2 is based on project contract, otherwise the negotiation process between in-house project team and other parties, whether contractors or suppliers, is followed (O2P2, O2P3, O2P5 and O2P7). The contract department/committee of a specific project is responsible then for a projects’ risk management, so it handles all claims and makes associated decisions (O2P8). Most senior project managers have not had any claim during their chosen project experiences (O2P3, O2P4, O2P9 and O2P10). O2P4 suggested that “this is because of the high level of transparency in the project between all parties.”

The following Table 11.2 illustrates how project managers deal with stakeholders’ incentives.

Table 11.2: Organisation 2 Project Stakeholders’ Incentives

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O2P2</i>	For contractors and some consultants and suppliers: - Thank you very much, you have done the job for us, we are appreciated, sometimes they give certifications to management. For individuals: - Organization management has evaluation for every individual, one of my team member has promoted.
<i>O2P3</i>	No not really.
<i>O2P4</i>	- Actually we have not got this, just complement sometimes from managers.
<i>O2P5</i>	For contractors and some consultants and suppliers: - If he done a great job he can award any of our following projects, and the consultant is exactly the same. For individuals: - Promotion for individuals can be higher grade according to their performance and achievements.
<i>O2P6</i>	- Actually we have nothing implemented in regards to incentives.
<i>O2P7</i>	- It has to be according to the contract, and we follow everything included in the contract.
<i>O2P8</i>	- I wish there were but there were not.
<i>O2P9</i>	- If you deal professionally with project contactor and guide him properly in a way that you are support and help him, so automatically incentive will be there.
<i>O2P10</i>	- There is not any reward scheme is implemented and even for other stakeholders

12.2.3 Organisation 3- Joint Public-Private Venture

Few stakeholders were involved in the joint-venture project team. The construction project team dealt with the client, project lenders, subcontractors and client consultant, who reported

project status with limited power and authority over the project (O3P2). O3P3 stated, “I do not have direct relation with project stakeholders.” Thus, other stakeholders’ coordination activities were the owner’s responsibility and managed through the client organisation, which was assigned by the government owner (O3P1, O3P3, O3P8 and O3P10). The client was responsible for providing all MTR (Minimum Technical Requirement) documents for different departments of the construction project team (O3P3). O2P4 commented that subcontractors were the main stakeholders; “this is an airport project and it has to have other things rather than construction projects, we need to have specialised subcontractors, e.g. the airport systems and passenger boarding bridges.” However, during the project concept design stage, all stakeholders were invited to group meetings, in the presence of the owner and the client, in order to explain project status and to discuss design elements. Following this, the design team had various individual meetings with every stakeholder, where they explained design information and discuss requirements and expectations (O3P9).

There is no application of stakeholders’ skills development. The deputy project director (O3P2) said, “unfortunately, we are not running such sessions, I am planning to do that.” However, O3P3, who is responsible for airport IT (Information Technology) stated that making an airport operation team familiar with different advanced technologies was not an obligation. A comprehensive manual is provided by a special consultant to be used in the operation phase (O3P6). O3P4 also organised different development sessions for his team, package managers and subcontractors, in which they learned an advanced system that could be utilised in a project environment.

A joint-venture team relies on emails to update project information, while any correspondence with the government owner is through letters (O3P1, O3P2, O3P4, O3P5 and O3P7). O3P2 clarified that in addition to emails and team meetings, the project team used smart phones when sharing information. He also stated that all correspondences within a project team were electronic-based, as memos and hard copies were not relevant. Official correspondences within a project team and with subcontractors were via a document control system called ACONEX (O3P2, O3P3, O3P7 and O3P8). Top management level and the CEO of all joint-venture companies along with the project team and various subcontractors could access the document control system (O3P19). O3P4 stated that it was very useful to use email and the ACONEX system in correspondence; he remarked, “otherwise we will lose many times and money of course, I do not like the use of paper.” For O3P6, based on wide

experience in the construction industry, coordination and communication should always be the main concern.

Monthly meetings are arranged between the client and project team, and the owner and client consultant are invited when needed (O3P1). Regular meetings are not held in a joint-venture project team, but relevant departments and their package managers meet twice every week with subcontractors. However, sometimes project departments meet every week on a monthly basis. A joint-venture project team and its various departments work together in the same place, which explains the lack of regular meetings (O3P4 and O3P4). O3P7 commented, “if I see a need for a meeting I will do and arrange it, otherwise no.” During the early stage of a project, the design department has different meeting arrangements, weekly, fortnightly, every three weeks and monthly (O3P9).

Workshops are compulsory for new project comers/team members, in which they receive project status information and essential training with regard to safety matters (O3P2 and O3P8). O3P7 stated that “all departments like workshops, we are working together very good now.”

“We do encourage issues to be raised in advance and immediate actions have been taken, I think this is the reason for project success so far” (O3P6). Joint-venture project managers agree that problem solving actions do not take time unless they are government-related matters (O3P1, O3P2, O3P3 and O3P8). This is due to the importance of time factor in a project (O3P5). As O3P4 mentioned, “we should do it immediately. It is not just in this project it is in all projects, it has to be done very quickly otherwise we cannot catch our target.”

The joint-venture agreement including contract and project scope of work are very clear and well defined to all project parties. However, changes in the project scope of work will be based on negotiation method between parties involved. The contract department is responsible for making the final decision after analysing and assessing the claim-related documents (O3P7 and O3P9). The construction project team has claimed for lenders payment delay, which is also included in the contract and not related to construction work (O3P2). O3P3 remarked, “I do not think we will have any claim, we have a good contract.”

Some departments have experienced a few claims, but also within the contract agreement (O3P4).

The following Table 11.3 shows how project managers deal with stakeholders' incentives.

Table 11.3: Organisation 3 Project Stakeholders' Incentives

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O3P1</i>	For individuals: - Bonus scheme for individuals at the end of each year based on performance, according to his attendance, performance, time punctuality, attitude, behaviours and his overall look.
<i>O3P2</i>	For individuals: - Reward scheme for labour who complied with safety requirements on site. - Every six months each company of the joint venture makes an assessment of their own staff, each company decided on the limited bones that we need to distributed to employees.
<i>O3P3</i>	For individuals: Yes there is for joint venture project team.
<i>O3P4</i>	- Actually I like this way, if you can make the people happy you can get more and better performance. For Subcontractors: - We are trying to give them some honors, certifications, special letters
<i>O3P5</i>	For individuals: - Incentives for personnel in cash form or certificates.
<i>O3P6</i>	For individuals: - Of course there are incentives. For Subcontractors: - We pay subcontractor early and reduce the credit facility period in order to make a big jump and push for him.
<i>O3P7</i>	For individuals: - We just have the bonus scheme.
<i>O3P8</i>	For individuals: - Intensive is clearly official, it is an initiative by the project manager.
<i>O3P9</i>	For individuals: - Financial incentives and some morale incentives For Subcontractors: - Sub-designers or designers the best incentive for them is to give them your second project, a future relation.

13. Appendix M

Interviews Data Description and Interpretation: Theme D

Appendix – M

13.1 Theme D: Leadership Structure - Data Description

Context			
Organization 1: Private Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P1</i>	<i>Senior construction project manager – programme manager</i>	<i>Refurbishment of Terminal Departure Lounge</i>	<i>01:28:46</i>
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“They have to go and seek endorsement for the projects ... A lot of more formal sort of leadership and control aligning you to pass from one phase to the next ... I perhaps more involved earlier on when we establishing the project, scooping it, developing it, getting it to the procurement stages and almost getting that into contract ... My job is a lot easier when we are in contract, because actually any responsibility for delivering the job goes then with the contractor, because they are managing day to day, running it and they just feeding back to me to make sure I am happy ... I have more active involvement in getting up to that point and determining who is going to scooping the work, developing all the project management governance and documentations, going through the procurement process and managing that elements of work ... It is various in those various stages from concept going through explore stages, defying the project, getting through the options, options development, solutions development, definition and implementation stages ... Various expertise you draw in from various people ... To lead that process and draw in the different people in different times; organization’s suppliers, organization’s internal bodies ... Leadership is kind of getting around them, motivating the team, managing that changing, team structure under the evolution of the project and its deliverables.”</p>			
Sub-theme: Empowerment Degree (ED)			
<p>“It is very much actually on contract ... The contractor project manager is the most important person, because he is the one who is going to his suppliers and managing the actual delivery.”</p> <p>“I am kind of a countable to degree on that project ... I have a project manager underneath me who is more responsible ... He is responsible for implementing various actions ... I am the one who is ultimately held accountable for the overall project ... But the actual project manager in (...) the airport organization team is not the project managers, the contract specialist is the project manager because he is the one under the contractor who is able to implement changes ... There are two key people, you as a project manager for the client and the contractor project manager who is delivering the project.”</p> <p>“At the early stage there might be the design body that were engaging to develop the solution ... We have the in-house design specialist, kind of provides a bit of guidance, support and endorsement ... Within our organization we tend to outsource that sort of functions ... We go to an architect body who design the project for us, so we have the internal people and they just make sure they make the job ... I might need somebody who is specialist in air flow and management, so I may employ somebody who is an expert in certain building regulations to make sure the contractor is giving me what I need in that respect ... I might employ somebody who is specialist in fire management system if my contractor is delivering a fire management system.”</p>			
Context			

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P2	Senior Construction Project Manager - Portfolio Manager of Asset Replacement & Commercial Capital	Minor Construction Works Programme: Office Buildings, Roads Networks – Escalators	00:52:45
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“It is various on the project and various on the individuals ... Actually there is not very hierarchical system and it is much more team focus, call senior team ... Somebody has to make that final call and that the leader of that team ... As project managers we have influence on the overall strategy, not with a specific areas or sub projects but on the overall.”</p>			
Sub-theme: Empowerment Degree (ED)			
<p>“It tends not to be, the people will change but they change in a structured way ... There will be an appointed leader at the project who is accountable for and will lead the project, if the skills need to change then that will happen.”</p> <p>“We have not got too many stakeholders in this project because we are focusing around the three principles suppliers ... We have three contractors who were carry out a wide variety of works, but there would just be a number of contracts ... We are moving to a model now ... Putting much more emphasis on them to lead the design and technical evaluation of the project, much earlier in the process ... We have given them the concept and then the outline problems so they can solve the problems and say this much money to do it, so that is quite new.”</p> <p>“We are regulated industry, we got to keep control of them ... We have to be very accountable for change the control around them all ... We have frameworks which give us the headline term and then we have individual contracts of specific pieces of works.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P3	Senior Project Manager in Direct Support of Strategic Initiative – Pre-construction Activities	Strategic Construction Projects Perspective	01:25:56
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“The in-house project manager is there throughout the project, because clearly we have to make sure that we are getting what we want ... In terms of leadership structure, depending on size, scale and complexity of the project, we put various levels of project managers ... The contractor has his project manager on it which is the single point of accountability into that contractor organization and he would absolutely be working in, although it is a client-supplier relationship, it is essentially a partnership to get the work done and get it deliver.”</p>			
Sub-theme: Empowerment Degree (ED)			
<p>“In the construction phase, we do put a lot of emphasis on the contractor project manager ... Early construction work, sort of in-house prime project managers are more leading and driving the project ... They make sure we are getting the right business solution for the airport.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P4	Senior project Manager -	Airside Physical Facilities –	01:19:40

	<i>The capacity Optimisation Programmes, Airfield Team</i>	<i>Dealing with Snow in Winter Condition</i>	
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>"I have got values around sort of openness and integrity and loyal ... I am very loyal to my project team and I will set with them and present us as a team ... They are not (..) in-house employees they are (..) project contractor employees, so I think there is a potential for (..) the private operator project managers to be looking at (..) the contractor team and saying we have not performed you or something like that ... Being able to see ourselves as one project team ... We have always kept to focus on delivery and achieving results, so I feel that approach works very well."</p> <p>"Basically, I do management-related stuff in terms of project relations, communication and scope, and the contractor deliver the construction."</p>			
Sub-theme: Empowerment Degree (ED)			
<p>"(..) the private operator is giving the contractor this contract ... Go and build A, B and C and then if somebody comes to me and says I want D, E and F ... I will sort of protect him and keep him focus on the project by doing the analysis on D, E and F and making sure he is absolutely right ... If still need to be done so let's start talking about how we can to do that, so it is kind of keeping the contractor focus on the project, but gradually getting him more and more involve in any change ... I think there is a great resource there to be used in terms of dealing with issues ... I have got a quite collaborative relationship with my contractor, so I am able to introduce issues to him and he will help me and workshop those issues."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P5	Senior Project Manager – Fast Development Projects	Separate Temporary Terminal	01:13:47
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>"Myself and (..) The contractor project manager ... He was a more expert delivery project manager than me ... I have managed all of the entire processes and he has got it built ... He managed the site and all of his team ... We both had recognized in the early days so that was our strengths were."</p>			
Sub-theme: Empowerment Degree (ED)			
<p>"It is an employer-supplier relationship ... They could not go off and do things without checking back to us ... If they found things that needed to add in to the scoop or change, they would raise conversation events or an early warning through the system which then was assessed by myself and the cost manager and then either instructed it back to PMI or send it and I do that ... There was quite a good change of information."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P6	Senior Construction project manager	Refurbish an Old Domestic Lounge	01:05:16
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>"We have a core leadership team, an eye on the project from the start to finish."</p> <p>"We have what we call a development manager ... The develop manager would lead the project"</p>			

and take that project to a certain point then the delivery project manager would come in and deliver that project ... The develop manager start his role before the delivery project manager ... There will be a hand over, between the develop manager and the project manager ... And as you get towards the end of the project and then start to involve the facility manager who then takes on the project to maintain it."

"Sometimes all of them are in-house ... Sometimes we do and it depends on sort of availability of resources ... The majority is in-house so key leadership role is in-house ... We do use supplier's project managers to deliver projects."

Sub-theme: Empowerment Degree (ED)

"The overall one is seen as a manager and a leader who has the authority ... I would say the commercial manager as well, and the contractor PM is a key role player as well, so that is the leadership team."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O1P7	Senior Project Manager – Capital Construction projects	Airside Segregation Project	01:05:57

Intension

Theme D: Leadership Structure (LS)

Sub-theme: Leadership Type (LT)

"Leadership structure on the project that I thought it is quite successful was very clear ... There were not too many ambiguous parties, it was very clear that I was the main client body ... There was a main commercial body ... There was a main coordinating contractor ... The whole heads of each of the main suppliers ... It was very clear and unambiguous ... Everyone played a fairly rule, it was fairly level of leadership ... There was not any lack of skills."

"You have a team made up of lots of different people and I think the best structure is that everyone takes on a rule which to some degree is a leader of someone else ... The right skills, the right place at the right time ... Overall structure of the leadership was undoubtedly me the leader of the whole team ... The relationship of individuals and the clarity of the rules and responsibilities that contributed to that."

Sub-theme: Empowerment Degree (ED)

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O1P8	Senior Construction Project manager – Leader of project Managers & Project Engineers within Airport Runways Projects	Airfield Pavement Projects (Runway and Taxiway Refurbishments and Prefiguration)	01:16:36

Intension

Theme D: Leadership Structure (LS)

Sub-theme: Leadership Type (LT)

"We had a lot of discussions at the beginning about how we set the structure ... Issue about how you carry leadership through from day to the night time ... We have got 4 project engineers at night, and the issue about leadership is how to lead the night time team during the day ... We have that period when we had to go every day of the week because it had been particular problems at night ... One of the challenges is managing that ... I would not say that the leadership practices of the work through the project lifecycle is doing that, it is just making sure it work better and we get everything without problems ... In case of such problems I would lead but will make sure this is ok ... I would sort of identify that particular problems and then put staff in place ."

Sub-theme: Empowerment Degree (ED)			
<p>“We set together, but some of them they are not collaborative ... With some of them it has to be ‘this is what I want you to do’ it is not an opinion thing.”</p> <p>“We have to make the decision but then it all authorised by what called contracting officers ... We have the financial contractual authorisation setting with somebody with a little bit distant from the project and because I think what we had in the past is hundreds of project manager making decisions so we lost control over financing, we lost control over the scope and the whole things.”</p> <p>“Now we have more control ... But at the end everybody has to clearly understand what your role is and what you can and cannot do.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P9	Senior Construction Project Manager – (leader of Project Managers (Security and Saving Operational Cost)	Terminals Security Project: Security Equipment in the Passenger Security Areas	01:43:20
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“It is all about instilling an emergency, a drive, a motivation and that mutual respect between team I think ... I believe the way to get the best out of the team is to work with them rather than dictate to them ... You get a better performance, they more honest with you if you work with them ... The less likely to be honest with me if I am a dictator I think ... If they tell me there is an issue, all I want to do is work with them to get it resolved because it is in my benefit to get resolved as well ... I report to my boss and he is going to be judging me on how well I deliver the project ... If I come across something they have not told me and then stop advantages anyone.”</p>			
Sub-theme: Empowerment Degree (ED)			
<p>“Yes, even though there is one project manager ... The project manager is either me or anyone has got the strength but they have also got weaknesses ... To have a successful team you have to recognize where people strengths are and where there weaknesses are ... More important is to recognize where your own strength and weaknesses are ... There is the design leader in (..) contractor side who I got every confidence in ... The contractor can work perfectly well with the operational point of contact ... I have got every confidence on him to be able to speak coherently, understandably and knowledgably about the design of this bench with my approachable colleague.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P10	Senior Construction Project Manager – Programme Director of Terminals Projects	Totally New Airport	02:24:06
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“I am not adopt to be specialist in contract or project control ... I just get a feed by them and they do not work for me ... But I manage that team and I get what I want out of it ... There is a leadership function there ... I expect people behave in the way I behave ... When something bad happen I do not shout ... I go set them down and then sort it out one thing and another ... About telling people when they do good, leading by examples, starting the safety ... If you talk about</p>			

safety everyday with your other half she will start thinking about it ... It is the same thing here if I buy in about what is important ... Messages about why we are here ... What we are doing ... How fantastic this is, how important this is, we deliver those messages and people have got a direction to going to ... If they have got that little bits you talk about it, goals and objectives along the way that link to money which link to me staying good in Friday."

I think leadership really simple ... It is just about being a person and not being frighten to be yourself ... I actually sorted I cannot pretend to be what I am not."

Sub-theme: Empowerment Degree (ED)

Context			
Organization 2: Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P1	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:35:30
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
Sub-theme: Empowerment Degree (ED)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P2	Head of structural engineering department	Private Aviation Terminal Project	01:21:25
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>"To develop leadership structure; you cannot do it unless you have full support from the top management ... They should be given the responsibilities ... This is the major idea behind this and its major input should be from management level."</p> <p>"It is not only just from top to down, it has to be in different directions as well ... Not also limited to the whole team work ... It has been expanded to other members of disciplines themselves ... To make sure things are exposed and let the people know what we are doing ... Decisions are yours, they may give you some ideas or some kind of thoughts but it is up to you, you can take it and if you do not it is alright."</p>			
Sub-theme: Empowerment Degree (ED)			
<p>"I mean this the thing that has to be developed in all respect doing the whole exercises ... What is the basic concept of teamwork is to bring some leaders out of it ... Somebody form my team and maybe I will not bring that from outside, within our team they should say 'ok'."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P3	Senior Project Manager - Leader of Project Managers & Engineers	Runways Development of a New Airport - Airfield Projects	01:18:19

	(Civil, Structural & Pavement)		
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>"At the beginning it was a bit complicated but over the time and actually before kick of the project everyone become aware of his job and responsibilities ... We have developed a system between us as project managers in terms of ways of communication and contact and weekly meetings ... Really helped us a lot."</p> <p>"It was type of people who going to benefit the project according to their background experiences and skills."</p>			
Sub-theme: Empowerment Degree (ED)			
<p>"We develop a full report, including the benefit of our request in long term, how it is going to benefit (...) the public operator, what is going to happen if I do not make it, also in terms of cost, safety, effective operation ... (...) The public operator president and upper managerial level were very supportive and understandable."</p> <p>"We have almost managed everything, sometimes we asked and got recommendations to save time and make sure we are doing the right thing ... Airport operation asked us to make some alteration on the taxiways as they have the experience and its one of their operation elements ... After realizing the benefit behind it we make changes in project phases."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P4	General Director of Engineering Affairs - Domestic Airports	Airfield Development Project – Domestic Airport	01:14:21
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>Leadership structure should be formal to be able to make decisions and control he project. When I have been appointed to be the project manager of this project, I have been asked to select my project team in different disciplines. In fact I really made good choices of selection. "selection criteria was just upon individuals 'skills."</p>			
Sub-theme: Empowerment Degree (ED)			
"It is always top-down in here."			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P5	Senior Engineering Project Manager - Domestic Airports	Development of Seven Runways	01:28:10
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>"There were just one leadership body who is us ... We had a plan and very tide timeframe schedule, as we had seasons pressure, summer and winter and many other factors ... We would pay a lot for any delay or mistake."</p> <p>"There was a project manager and then my assistance ... Then the different disciplines at the same level ... Project manager and assistant must have leadership skills, deal with people, strict as well ... They also need to make team members feel their importance and responsibilities."</p> <p>"it is top-down ... I believe that it should be top-down whatever the organization is ... The top guy should be really competent and very strict, this is in order the team to be successful ... If</p>			

your boss is not as good as he should be, you will be the same.”			
“Yes it happened a lot because of the experience, skills, quality and capability they have, sometimes you do not even ask about the subject or task.”			
Sub-theme: Empowerment Degree (ED)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P6	Senior Project Manager – Communication & Control Systems	Totally New Airport Information Communication Technology of the New Airport	01:10:45
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
“It is based on the position and not about skills ... If a guy who got a position is strong enough he can then lead ... Mostly single mind.”			
Sub-theme: Empowerment Degree (ED)			
“Actually we were flexible on doing that ... But our management did not want that.” “I have enough support from upper management level to proceed with anything rightfully to do and finish the work on time ... The confidence they have on me because of my past experience on delivery.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P7	Senior Project Manager - Deputy Project Director – New Airport Airfield Development Project	Totally New Airport – Planning and Construction	01:10:42
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
“Everyone has his own leadership, if we are talking about my top-level management we support him and he supports us ... If an individual got the skills and the leadership characteristics I use it, because this makes the project successful.” “Initially we had a team leadership, but sometimes it get sloppy, then you start depending on one guy and I think this is a problem ... I always like teamwork`, unless we have in the team somebody going to rowing your leadership then I get rid of him.”			
Sub-theme: Empowerment Degree (ED)			
“I share these with my team and sometimes make my own decision ... It depends on the case ... On the other side it has to be top-down.” “They can lead especially if I do not have the required or specific knowledge ... Definitely, I can consult them, because they have hired for that reason at the first place.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P8	Senior Project Manager – Head of Civil Department	Totally New Airport - Airfield Facilities Upgrade Project	00:52:10
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			

<p>“We are coming from different cultural background ... It is very difficult and very challenging.”</p> <p>“The process of that came from the top level.”</p>			
Sub-theme: Empowerment Degree (ED)			
<p>“Honestly speaking each department is like a kingdom, they are all feel powerful within themselves ... Each of them has to cooperate with each other for the success of the project and they are not.</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P9	Senior Project Manager – Head of Contract Control Department	Totally New Airport	01:16:52
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“At project early stages we have developed three levels of management, first level called steering committee, comprises (..) public operator’s president level and various senior members from different ministries, which meet every month to take project strategic decisions ... Second level is project management team, which is our team, in which we were taking executive decisions associated with committee strategic decisions, we develop their plans and execute them ... The 3rd level called field management which was an external body (construction manager) responsible to supervise site construction works.”</p>			
Sub-theme: Empowerment Degree (ED)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P10	Senior Project Manager – Head of Contract Control Department	Totally New Airport	01:16:52
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“Leadership is not based on individual’s skills ... Instead, working experience and the holding position of managers.”</p>			
Sub-theme: Empowerment Degree (ED)			
<p>“Extremely controlled by top-down method ... No way that the consultant or contractor can lead the project unless generated from the nature of the contract.”</p>			

Context			
Organization 3: Private and Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P1	Project CEO	Totally New Airport	01:35:30
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
<p>“And we appoint leaders according to individual skills and the nature of tasks they assign to do. Our COO has a previous experience on airport projects so we assigned him as a PM for ORAT, and he is preparing the team, all coordination required, all staff, handing over schedule of the new airport and the test opening period.”</p>			

“Within project team each level has its own authority ... It is horizontally based between different parties, due to equal shares in the cooperation ... (..) the owner is our partner ... We are dealing with the project without involving them ... But of course, we must take (..) the owner approval ... In terms of our operation company, apart from financial matters (budget approval or any increase on it) they take their own decision without involving us ... Even this works with the construction team.”

Sub-theme: Empowerment Degree (ED)

“We are a team ... I am not dealing with the contractor as a separate body or client ... I offer all help, support, solutions and any difficulty related to documents’ approvals whether from (..) the owner or other stakeholders ... It is a teamwork structure, the party who have the skills and experience can lead ... I give full authorities to the COO who is leading the ORAT, so he does not have to come back to me in every single detail ... I monitor the project status and take part when I want to draw his attention to a particular issue.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P2	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:37:37

Intension

Theme D: Leadership Structure (LS)

Sub-theme: Leadership Type (LT)

“The key person here is the construction manager ... The construction manager reports to the project director and deputy project director ... We give them (the construction manager team) a space of freedom in construction issues of course ... I can see that centralization is only in crucial decisions, mostly in performance and financial related or something like that.”

“The leadership in the project is flexible ... It is at the end of the day “the leadership of the project” ... There is a space of freedom of each department’s head to make his-own decisions ... Some decisions are not from the project director, instead from a department manager ... Straightaway when someone makes a decision from his department I can just only approved that ... It is his department and his decision ... We make sure that the department managers have enough power to work within their departments, make all issues’ reports, and manage their staff, and also to have the power of hiring/discharge people.”

Sub-theme: Empowerment Degree (ED)

“Yes, we do admit that (..) The CM organization is an international company and has the experience in building airports and we totally respect their experience ... We had to consult them for taking any decisions and we listen and respect their opinion ... Technical things regarding the airport we just say go ahead ‘you are the boss here’ as they have the experience ... Other concerns probably like financial issues or local market experience related, we are the leader here.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P3	Senior Project Manager – Leaders of Project Managers of IT Airport Construction Project	Totally New Airport	01:16:11

Intension

Theme D: Leadership Structure (LS)

Sub-theme: Leadership Type (LT)

“It is a team leadership and not focuses on one person.”

"It is actually comes from top level and then distributed in horizontal way ... Most of the power and authority belong to the project director ... We have a very hierarchal leadership structure and project director also wants project teams in this way."

"Actually we have not reached this point yet ... If I face this I will let them lead and I, actually, prefer that and would like to be the guy in this shape ... I am in this business for like so many years, since 1989 and I think this part is only for the construction."

Sub-theme: Empowerment Degree (ED)

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P4	Senior Project Manager - Quality Assurance & Control Manager	Totally New Airport	01:32:38

Intension

Theme D: Leadership Structure (LS)

Sub-theme: Leadership Type (LT)

"Team leadership is always better ... I started my job and adopted this way and really like it ... Not only in airport construction it is in general construction."

"There is a sharing responsibility about this ... Mostly top management control the budget, this is the reality of any kind of jobs especially the construction."

Sub-theme: Empowerment Degree (ED)

"Sure always ... We share project responsibilities we can reach our target easily and quickly by that way ... I am always like to work as a team not just with my team but also in all the construction works."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P5	Senior Project Manager - Project Finance Manager	Totally New Airport	01:11:56

Intension

Theme D: Leadership Structure (LS)

Sub-theme: Leadership Type (LT)

"I can say both an individual and team leadership ... The leadership was through the project manager and also through department heads ... It is better to consider it as group or team leadership."

"It is top-down in general."

Sub-theme: Empowerment Degree (ED)

"Yes defiantly we adopt that sometimes."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P6	Senior Quantity Surveyor Manager	Totally New Airport	01:05:57

Intension

Theme D: Leadership Structure (LS)

Sub-theme: Leadership Type (LT)

"The leadership here is team leadership ... The success of the project due to its clarity and I mentioned we have independent decision making at site level ... This is one of the most important points."

"The project director and deputy project director have the authority and power up to certain

limit so we can proceed effectively.” “Actually it is top-down.”			
Sub-theme: Empowerment Degree (ED)			
“Yes for sure, that is why in some cases we assign the right supplier and subcontractor even if associated with high or extra cost ... We know that they are the best in their field and will succeed.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P7	Senior Project Manager - Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
“It is hard to say, this is a construction project ... I think both individual and team leadership are important.” “They are horizontally ... I think in general or as much as possible it is horizontally in order also to save time, otherwise you can consider it top-down.”			
Sub-theme: Empowerment Degree (ED)			
“Of course other stakeholders can lead the project according to their skills and experience at some particular points.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P8	Senior Project Manager – Health Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
“It is a team leadership ... It depends on the situation I can say they follow both ways.”			
Sub-theme: Empowerment Degree (ED)			
“We are taking all advises ... They must have big rules in special tasks.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P9	Senior Project Manager – Design Project Manager	Totally New Airport	01:15:37
Intension			
Theme D: Leadership Structure (LS)			
Sub-theme: Leadership Type (LT)			
“It is team leadership ... Every package manager (discipline manager) is like a project director ... He is working like nobody is above him ... I have designers and every engineer is leading something in the design, so anyone can come and contact an engineer, it is not necessary to contact me.” “It depends on the content ... If anything related or has a financial impact it is top-down ... Otherwise, sometimes it is mix, not fully horizontal, because there are no horizontal decisions. Always there is top-down but in different ways.”			
Sub-theme: Empowerment Degree (ED)			
“Not to lead ... It is not a matter of giving him a space, I gain from his experiences and will not			

give him a room to control, because if he control his package he will affect the others ... We have to be in control even if his knowledge is better ... We have to improve ourselves, read more, set with everybody and we have upgraded ourselves actually by that."

13.2 Theme D: Leadership Structure - Data Interpretation

13.2.1 Organisation 1 – Private Ownership Structure

Project leadership in O1 changes throughout a project's various phases. A development manager, from in-house, leads the project during the early project stages and manages that project to a certain point. His role is to establish the project, scoop it, develop it and get it to the procurement stages and then into contracts (O1P1). Thus, management-related matters in terms of project relation, communication and scope are within in-house managers' responsibilities (O1P4). O1P5 stressed, "I have managed all of the entire processes and he has got it built." A project delivery manager, from the contractor's side, then starts his day-to-day construction management activities and reporting back to the in-house manager. Following this, towards the end of the project, a facility manager takes on the project to maintain it (O1P6). Hence, there are various levels of leadership, but internal managers hold key leadership roles and manage the whole team (O1P3 and O1P10). O1P7 commented, "leadership structure was very clear, it was very clear and unambiguous, everyone played a fair role, it was a fair level of leadership and there was not any lack of skills."

With regard to empowerment, O1P1 and O1P8 mentioned that an internal project manager is the person who ultimately holds accountability for the overall project, but the actual project manager is the contract specialist, from MSP, as he is able to implement changes. O1P6 stated that the commercial manager has also a high level of authority over the project. Additionally, the two key people in the project are the internal manager and the contractor project manager (O1P1, O1P3 and O1P4). He noted, "I might need somebody who is specialist in air flow and management, so I may employ somebody who is an expert in certain building regulations to make sure the contractor is giving me what I need in that respect." O1P2 stated that people will change, but they change in a structured way. Accordingly, there is a collaborative relationship between internal and external project parties, which takes the form of an employer-supplier relation (O1P5). "To have a successful team you have to recognise where people's strengths are and where their weaknesses are" (O1P9).

13.2.2 Organisation 2 – Public Ownership Structure

The leadership structure and associated responsibilities of O2 projects are developed at top-management level (O2P2 and O2P8). However, in some projects selected project managers

can form their teams' leadership structure (O2P4). Throughout the project journey, public operator managers hold leadership responsibilities (O1P5). O2P6 and O2P10 explained that, within O2 projects, leadership is not based on individuals' skills or competences, whereby a person in a high managerial position and strong personality leads a project. O1P7 stated that a project will experience some problems if people depend on just one individual; teamwork is always good.

Department project managers in O2 have the required support, power and authority, from upper managerial level, in construction projects (O2P2 and O2P7). O2P8 stated that department heads hold power within their own divisions, but they do not cooperate with each other. The whole leadership and its associated factors are closely controlled by top-down method (O2P4 and O2P10). Accordingly, external parties whether consultants or contractors cannot lead any project at any time unless it is part of the contract agreement (O2P10). In this regard, O2P7 commented, "they can lead especially if I do not have the required or specific knowledge. Definitely, I can consult them, because they have been hired for that reason in the first place." For O2P6 project managers can share leadership with external parties, but an organisation's upper-managerial level does not support this.

13.2.3 Organisation 3 – Joint Public-Private Venture

Leaders in O3 are assigned according to their skills, competences and the nature of the project tasks (O3P1). However, the joint-venture project director is at the top of the project team structure, but the key person is the construction manager, who is the head of the construction department (O3P2). Overall leadership is based on team leadership and does not focus on one individual (O3P3, O3P6 and O3P8). O3P7 emphasised the importance of both individual and team leadership within construction projects. O3P4 stated, "team leadership is always better. I started my job and adopted this way and really like it." Therefore, the project director, deputy project director and department heads share project leadership. O3P9 underlined that each package manager is like a project director, and each manager carries out his specific tasks and shares leadership responsibility with other discipline managers (O3P9).

Most authority in the project delivery stage belongs to the project director and deputy project director, who are from the CM and contractor organisation, respectively (O3P3 and O3P6). The parties of the joint-venture (CM and contractor organisation) hold equal shares in the

cooperation, but they must seek the owner's approval with regard to financial matters (O3P1). O3P2 mentioned that the CM organisation leads the project in terms of technical-related airport construction, according to its experiences. Financial issues and local market related matters belong to the local contractor. Therefore, project responsibilities are shared between parties involved (O3P4). The person or organisation with the most relevant skills and expertise can lead the project (O3P5, O3P6 and O3P7). In addition, only the joint-venture parties hold project authority in making decisions (O3P9).

14. Appendix N

Interviews Data Description and Interpretation: Theme E

Appendix – N

14.1 Theme E: Project Culture - Data Description

Context			
Organization 1: Private Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P1</i>	<i>Senior construction project manager – programme manager</i>	<i>Refurbishment of Terminal Departure Lounge</i>	<i>01:28:46</i>
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“This is driven by overall organization ... We almost call a framework suppliers ... How (..) the private operator operate and sort of the stand expectations and systems are in place at a fundamental level ... A certain sort of the employee requirements in terms of how we manage information and how we deliver, how we handover, how we manage safety and cost etc. ... Suppliers have to buy into that ... They understand how we operate the certain organizational interfaces and forms up to safety management where people and all the suppliers have to support that sort of forms to make sure we are sharing a culture for safety management, quality management and having that can develop relationships and behaviours ... Collaborative organizational culture between our self and our suppliers.”</p> <p>“The project going to be successful if everybody successful ... That is part of our contract type (NEC), as a contracting mechanism, it is must be sort of reasoned approach to managing contract ... Bringing the team together and filling the form ... We draw people in and we all set around the table together as a group of pairs ... All with single aim of delivering the project for everybody’s shared success.”</p> <p>“The project only fall down when that is not the case (the various principles) ... This is fundamentally developed at the high level ... It is about setting its expectations in the project kick off meeting at the begging and all the key people come in ... Actually, at the human level ... How you deal with other people and setting those expectations of talking openly and honestly about issues ... Respecting each other, personal values and other professional agendas and inputs.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>“Safety is fundamental within the organization ... Suppliers operating here are very aware of expectations that come from top level down ... We have our safety teams, regular forms, top-level monthly construction safety forum which all the suppliers attend which is quite a general strategic type forum ... In addition to that in the lower level, programme level or sort of programme regional type safety forum and various sub programme levels.”</p> <p>“We have the overall top one, development safety leadership forums ... And underneath that there are various programmes for various projects ... The other programmes which called portfolio projects and this going to define the outputs, these 3 programmes have safety leadership forums.”</p> <p>“That is the overall culture for safety ... Within the projects themselves there are certain targets that we have to achieve in terms of safety and monitoring our success ... We take learning from previous incidence and make sure that we constantly learning, improving and driving that</p>			

safety standards ... safety is the first point in any agenda.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P2	Senior Construction Project Manager - Portfolio Manager of Asset Replacement & Commercial Capital	Minor Construction Works Programme: Office Buildings, Roads Networks – Escalators	00:52:45
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“I have never been part of something that is taking a structure approach to inducting people into a culture.”</p> <p>“Project values or targets, all set out in the project management plan ... In the minors projects there was not project management plan in place ... Harder bit was understanding the business driver behind it and making sure all roles are clear around that.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“Sure, we meet Every week anyway, if there is something quite specific, working sessions will be in place when required ... Again it depends on the nature of it, it could be just the project management team, it could involve the client and it could involve the contractor or any combination ... But depend what the issue we are trying to fix ... The weekly meetings are the internal team meetings, the (...) in-house community and our supporting function (manage service providers), and the ad-hoc meetings tend to be broader and more diverse.”</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>“No compromise, simple is that ... You do not compromise in health and safety, if you doubt or if it down you cannot go anywhere nearer or find another way ... The roles and regulations are quite clear ... Safety at (...) the private operator is about personal commitment ... It is about what you is the project manager, value about health and safety ... I have to care about everybody on site not related to me ... I have to care about everybody pass on my site ... I have to care of the people who work for me even if they set in the office behind the computers ... So, I have to assure they are safe and well at all the time ... Even for the contractor site.”</p> <p>“The principle contractor is accountable of where the project execution requirements ... All the expectations, all the behaviours ... The leadership role is very much around what behaviours do our model, how visible am I in there, do I act and speak consistently around health and safety, and actually am I interested in safety ... That is where the leadership bit come is”</p> <p>“Every person go through an induction when he come to the site ... Part of that is an airport safety induction ... They are talk about a specific dangerous and hazards associated with working close/in aircraft, also to the operational ... It is a specific induction site project etc. ... The bigger the project the longer the induction tends to be ... Everybody goes into site goes to the induction, from any party whether in or off-house people.”</p> <p>“The contractor manage the site, so they are responsible of the actual safety on that site ... Our role is to make sure that is done and we comply and make sure everybody get safe.”</p> <p>“In-house project managers are responsible ... We have safety advisor and reps, but they do not live and breathe the project these days ... We do not have a separate safety function ... They are there to support us.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length

01P3	Senior Project Manager in Direct Support of Strategic Initiative – Pre-construction Activities	Strategic Construction Projects Perspective	01:25:56
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“Usually I would get some sort of business case from a department that say, we need a project to fix this ... There be a statement of need, there be something that ‘we think we need a project’ ... My job is explore that business need a bit further and really get to the cause or what is the problem that we trying to fix it, do we need to fix it ... Is it align with our strategy ... Once you have got the business need established ... We would go out to either some sort of multidisciplinary consultant or design consultant to do a bit more exploratory study and to be able to understand high level of solution strategy.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>“Safety is number 1 priority ... We make sure that we are contributing to the safety elements</p> <p>“Safety is a consideration in everything we do ... Any project at all that involves design work, part of the employer requirements to the designer will be to consider safety in design ... In the most dangerous environment that we have here ... Long before we get to construction we want to be making sure that we are considering safety in all aspects of the project.”</p> <p>“It is not pre-established documents ... It is aligned with health and safety legislation, it is more of a cultural mind-set.”</p> <p>No, did not have any training ... The only thing I have involve in where we put training pieces again at the early stage working out ... We consider training requirements as part of the project delivering rollout operational radiance in an early stage.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P4	Senior project Manager - The capacity Optimisation Programmes, Airfield Team	Airside Physical Facilities – Dealing with Snow in Winter Condition	01:19:40
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“I it is definitely around openness and loyalty ... We as a project team have a loyalty to each other ... I am the project manager and I give my cost manager, all the functional managers, the flexibility to develop the cost plan or the risk register how they want to ... But took me through it ... I will presented as if it mine, and if there is any mistake in it then it is my mistake ... I have given them that freedom and, you know, I show them loyalty in that way ... I have got the luxury of having a very good team, so it is easy for me to be loyal to them ... I find it harder if they were not so good ... I am sometimes think about different ways of getting people to buy into the project and performing well ... I think we have defiantly got some shared values ... The loyalty things and the openness I think is defiantly the two that put the team together.”</p> <p>“We have got a process to assure a good quality at the end of it ... The first time you go out and do piece of concrete ... Then we want to see and exposure how they have done it and see testing.”</p>			

Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“Yes, the induction is definitely being focused between the old planner and the new planner, the two guys talking and then I will take the new planner outside and show him the site, introduce him to people ... He probably gets a couple of hours on all the projects, all of the projects that he responsible for.”</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>“(.) the private operator is very clear about safety and what we expect from our contractors to do ... We know what is best in industry for safety in construction ... The challenge as a project manager to demonstrate that, to reflect the high standards that (..) the private operator has in terms of figures, reflect it in how you are when you in front of the contractors.”</p> <p>“When you first arrive, there is a safety induction ... That very much talk about behaving safely ... There is all these harnesses, safety boots, gloves, glasses, pedestrian crossing and all these thing around there to make you safe ... Induction really helps you understand that sort of behaviours or safety piece. I was in the army before this, I do not think the army as advanced as Heathrow is in terms of safety. So, it is quite a learning curve for me.”</p> <p>“I think it is just demonstrating to everybody that they are not willing to compromise, there are safe ways of working on the airport in a live operational environment without putting anyone’s life at risk ... Whether passengers, employees and contractors, there is a way of doing that ... When we also deliver the project back to (..) the private owner, it is got to be safety build and safety used ... I think project teams would have a view of quality, is it safety used, is it going to be efficiency used.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P5	Senior Project Manager – Fast Development Projects	Separate Temporary Terminal	01:13:47
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“The values and principles were needed to understand why would we doing the project and why we would doing it in such a short timescale ... It was slightly different of what we normally do at here. Normally you have a lot longer, you have a lot more consultation and a lot more inputs from our design and technical teams ... We going to do this in 6 months.”</p> <p>“We have a lot of standards at here for all sort different type of equipment, carpets, walls, lighting, chairs, tables, screens ... In this project I sat technical leadership and design down and we had a discussion about what the project was trying to do ... My main point to them was we cannot go through lots of hold ups in trying to bend over backwards to hit our standards ... Specifications of carpet ... Chairs ... Desks where MDF painted finish.”</p> <p>“How I worked really by building relationships ... I guess that is one of the reasons why I always chosen, because I think they thought I can probably deliver it, manage it, get people to work with me ... I have got quite a collaborative approach ... I will bring people in and work alongside.”</p> <p>“Because you built up a certain reputation and all level of understanding people ... They know generally if I give my word on something, I will do my best to make it work.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“We held with (..) the contractor when they appointed ... We held an afternoon session of running through the scope ... Talking to them about what we developed so far, background of the project and what we are planning to put in there ... What we thought the finishes might be ... They got both flavours for the project and understanding both of the phases.</p>			

“People come and went off the project, so couple of people left halfway through and we got new people in ... But again it was the same process just reviewing everything with them and making sure they understood.”

Sub-theme: Proactive Safety Strategy (PSS)

“Safety was very good ... We used one of our safety advisors in here ... Fortnightly safety inspection either with me or (..) a graduate guy and with (..) the contactor project managers ... We had our quality team quite closely involved as well ... We had not got any incidence on site at all ... (..) the contractor really who run it very well ... Their project manager make sure that anybody come to the site had an induction ... They had a room dedicated to safety induction and training on site ... They have few cabins ... Myself and a couple of the other in-house guys, went over a few times and joined those sessions.”

“One thing actually before I forget, I brought this documents and you are welcome to take them away, it is a lesson learnt session that we did after the project where I brought together some of the team and we went through all of these headings ... We tried to pick up a lot of the positives ... A lot of these we have covered today.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P6	Senior Construction project manager	Refurbish an Old Domestic Lounge	01:05:16

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

“I always try to encourage open and honest discussions on everything ... Encourage the can do attitude ... Working with integrity ... Listen to people views all the time ... Make sure that people are able to raise concern, listen and communicate and resolve issues ... Also making sure that everyone's clear on what expected of them as well, so people got accountability work on a team and drive through a common goal ... By brining everybody together and then you may follow up by workshops as well.”

“Boundaries between discipline yes, but you know people know who do commercial works, people know who the design team is ... But I like to sort of generate, an environment where everyone is work together ... It is about people at the end of the day.”

Sub-theme: Habits/Behaviours/Attitudes (HBA)

“Yes, we have developed an induction plan for people ... They would know what the project is about, the team they are working in, what I need to do in the first, what we do is ... This is your plan for the first two weeks ... What is project structure ... What (..) the private organization is ... What its objectives are, strategies and then we give an idea where we can fit in (..) the public operator and things like what you need to do to get a pass ... So there is a clear plan that they followed ... People need approach to follow.”

“You need a good induction plan for people ... The induction strategy is back to 2011 and was for the core team member, so the client, the PMs, the internal stuff and some of the junior PMs who resource from contractors or contract agent stuff also get the induction ... It worked quite well and keeping a good start ... When someone new started the project will go for induction, you just use the same induction pack.”

Sub-theme: Proactive Safety Strategy (PSS)

“Health and safety is number one ... It comes over everything else ... Our view is if you get the safety right everything else pulls together, you get a good quality project and project will deliver on schedule ... There is no any compromise on safety ... Our target is no one gets hurt ... We got all the processes in place, we got all the tools and the method to make sure that we work safely but we also work on our behaviour side of it as well ... Everyone has the right to go home as come to work and that includes getting to work as well.”

"We use what we called behaviour safety training ... How you approach people is powerful part of it, engaging with the guys out in site ... I make them feel they are part of the team as well ... Engaging with the stuff and the guys who got the tools ... It is around you as an individual ... If you believe in it everyone else will believe in it, if you do not believe in it then there is a problem ... Just keep and look out for each other ... If you see people walking down the stairs and they have a cup of coffee on their hand ... Drive that culture for the whole organization ... It is not just about construction it is every wear in here."

"With regards to safety equipment, we provide the framework for our contractors ... The contractors have their own systems and tools that they use ... They all have method statement for risk assessment, they all have communication whether you communicate to the stuff, so the staff will see how the project performing ... We have a standard that the contractor sets, we involve contractors develop our standards ... We get all our contractor together in a regular basis in a workshop environment, these our standards and we try to get all contractors to input into that ... It is a collaborative approach but setting the expectation very high, any deviation from those standards is not acceptable, it is around no one get hurt on site."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P7	Senior Project Manager – Capital Construction projects	Airside Segregation Project	01:05:57

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

"Project values and principles that form the environment of success were that we had shared values and we had shared principles ... We worked closely together we were collocated ... There was a very strong target or number of targets."

"I think showing commitment myself ... I show commitment as basic as working along hours ... Show interest in most aspects of the work ... I encourage people to share their learning and their enthusiasms for the work and that was right through all levels."

Sub-theme: Habits/Behaviours/Attitudes (HBA)

"We will take them through the project ... We did have sequential pack of information which were both about the individual project and what we were developing ... You could share a bit of a longer story of what we are doing and why we are doing it ... In terms of induction for suppliers, it just a sort of culture really of encouraging suppliers themselves when they brought people on to come and meet everyone ... There is a formal induction ... As everyone comes into the project needs to be formally inducted ... It is just a culture of we doing this today and we are aiming to do this."

Sub-theme: Proactive Safety Strategy (PSS)

"We very much had what we call behaviour safety ... You went up into the project ... Went down to the site and you talk to people and you have got different trades to talk to one another and you did not let go by really ... If you notice anything at all you are expected to say something about it, get it rectified."

"There was behaviour safety training ... All the manager would have it, all the supervisor would have it, most of the operatives would have it on that site ... Behavioural safety at that time was very much they show you how to literary go up to people and engage with them and talk about what they all doing ... Behaviour safety is about doing the things right ... It is making sure that everyone behave safely ... What you want is people, ideally of different trades as well as colleagues, to make sure that each person is safe ... You need them to communicate, so you want

them to be able to approach other trades ... For the different trades we expected them to have certain safety qualification ... We have the different levels of trainings ... We have the site induction and that was specific of working at the airport and safety related to the airport.”

“In terms of delivering project equipment to project site, they have to have a site passes ... When you get an airside ... You go to the central security place and you have a lecture ... Before you have the pass you have been told what the pass means ... Where you can go with that pass ... Why there are particular security requirements at the airport ... To work on the site, you get some of that information in the site specific induction ... You get the central information from security ... You get the site specific from the principle contractor.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P8	Senior Construction Project manager – Leader of project Managers & Project Engineers within Airport Runways Projects	Airfield Pavement Projects (Runway and Taxiway Refurbishments and Prefiguration)	01:16:36

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

“Suppose in the current project, we are trying to get a culture of honesty and openness ... The environment working on the runway, if somebody does something wrong you got really need them to tell you that they have done something wrong ... Than the runway that is not safe and become danger to aircraft ... So we are trying to get this culture where tell me if you have done something wrong ... We want to know the issues and then we can go and do something to put it right ... It is very much what we are trying to behave is people to be open and honest with what they doing ... All the accident we had at least 50% or over is due people behaviours ... It because people decide not to operate to that method standards at all ... We have done a lot of works on behaviours so the contractors put all of their stuff through behaviour management courses ... Half day and one day courses on site to just to go through wrong standards and bad behaviours and trying to change that concept.”

Sub-theme: Habits/Behaviours/Attitudes (HBA)

“If he going to go out on site to do some work or visit then he will have an induction on site process ... If we get a new starter or new stakeholder coming to the project, we will then set down with him and taking him through the project and explain to him what we have done and what his role is ... We do not have a particular process if somebody starts the project, it depends on what we do on good management practices ... Probably the APM stuff that saying that somewhere you should do this, but we do not have a particular process because it could be endless process a lot of it comes from experiences.”

“There might be bits and pieces ... I mean there are some technical trainings at some level if you want to go and work on the electrical system then you have to be trained, so there are elements of trainings to do stuff ... If you want to drive airside you have to go into training course to let you to drive ... You cannot just turned up and go out to work, you have to get card then you need driving permits.”

Sub-theme: Proactive Safety Strategy (PSS)

“When you got work in the airfield you have the normal construction safety related stuff which is familiar to everybody and sort of things like the use of ladder or digging a hole in the ground ... But when you go out in the airfield you got another whole set of safety related things and one of those once which we have suspicious with at the moment is driving ... Drive in the airside road you need to need to get a driving permit ... Medical and then you have a half day driving test ... Explain to you the things about the airport and one of the key things when you cross the

taxi ways you have to control crossing them ... It is like a road that you give a way ... Signs so you cannot get a cross you have to follow the rules about planes so that is a big piece of that explained to people about driving ... Lots of things about how you work in the airfield.”

“Have got the airside operation department ... They deal with the interface with the CIA ... We have got our airside safety department and they deal with driving and other related things ... We spend a lot of time trying to get the contractors that new to the airport ... They understand basic safety stuff but they do not always have much comprehension about the different environment you work in and what they can and cannot do.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P9</i>	<i>Senior Construction Project Manager – (leader of Project Managers (Security and Saving Operational Cost))</i>	<i>Terminals Security Project: Security Equipment in the Passenger Security Areas</i>	<i>01:43:20</i>

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

“Behaviours and culture, again, it is respect, openness and working with the team rather than dictating to the team ... I do not actually have to interrupt or sort of get involved in terms of telling them they are doing something wrong and they should do it in that way ... My involvement is more working with them to resolve problems that arise rather than telling them they are doing something wrong ... I think that is really built up quite quickly from the beginning of the delivery because of the initial conversation we have and the manner in which I put myself across to them.”

Sub-theme: Habits/Behaviours/Attitudes (HBA)

“The terminal operator as a stakeholder has become more and more important and now we are in delivery they are the most important stakeholder ... Key to that is working well, when we started the implementation it was not a case that we started a new terminal now, this is what we are delivering ... This is what we need to do in terms of a construction site ... As soon as we started the implementation they were already brought up to speed on what we will be doing ... It would probably be more through the monthly stakeholder sessions ... This is what is coming up, we come along in two month times and then we come along in month time and then probably a week or two before you actually start ... You set up a session just with the terminal operator’s guy as a more or sort of introduction on can be project managing ... Who is going to work on this ... This is what they need in terms of construction site ... This is how long we are going to be ... This is what the benefits of the project are etc.”

Sub-theme: Proactive Safety Strategy (PSS)

“Any contractor on site will have been through a number of health and safety inductions sort of processes ... Each supplier has their own health and safety induction when they start a project ... In terms of the environment that will be working in ... What needs to be put in place in terms of protection from passengers ... Where the emergency exits are etc. ... At the beginning of every night work there is a briefing session from the in-house manager or managers on duties in a terminal each night ... All of the contractors’ night managers will go to that briefing session ... Night managers will then brief the team.”

“Health and safety at (...) the private operator is number one ... We are doing something to a good quality, health and safety is part of that ... Inductions are multilevel and everyone on site is fully aware in terms of PPE (Personal Protective Equipment) that they need to wear ... It varies between companies and between construction sites ... If you are on site you must wear your boots, your glasses, your hat and your gloves, whoever the job.”

“There is a very strict framework when vehicles can go airside and that is managed through logistic centre ... Any vehicle that delivering anything airside they have to go to logistic centre first ... They need to have a prior booking to say that they are delivering airside ... The stuff at logistic centre will check on the system ... They will hold that lorry until they designated delivery time comes around ... The lorry will then be escorted to (..) the airport ... It will go to control post/check point for vehicles and it will then generally have a certain amount of time to get in deliver and come back again ... In that way they can manage how many vehicles in airside at anyone point, that is because the framework also includes registration number of vehicle, name of driver ... So they can all be checked that they have got badge and the vehicle itself has got badge on it to allow it to come airside ... It is quite rigid process.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P10</i>	<i>Senior Construction Project Manager – Programme Director of Terminals Projects</i>	<i>Totally New Terminal</i>	<i>02:24:06</i>

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

“The word I live in life is integrity ... I think it is about integrity, if you are honest with people when you are not happy with them ... Sometimes I do not because it is a bit of scary conversation, most of the time I do ... I think project values are my values, my values are my team values ... My teams’ values are my values ... I think I feel quite simple these stuff really.”

“What I am talking about is the future ... We moved from Parting client to intelligence client through professional collaboration ... It is about people particular knowledge and skills necessary ... We are changing how we work in Q6 ... our supply chain must has the supporting strengths and behaviours ... These are Q6 values and behaviours ... We are using that in the contract with our intelligence client ... Establish focuses and accountabilities ... act with professionalism and integrity ... Demonstrate understanding and collaboration as well.”

“These are practices influencing successful development of Q6 behaviours ... it has done by one of our consultant ... For this year ... It is about politics, culture, communication, planning and execution, conditions, achievements, learning, enjoyment, visibility and trust ... and this is another thing about leadership, we have couple of weeks ago ... I think we have got technology, we have got all computers ... We have got process ... We have got management getting people to do stuff ... it is the only way to achieve more, I mean through leadership.”

Sub-theme: Habits/Behaviours/Attitudes (HBA)

“I am senior here ... I have got young people reporting directly to me ... I have got the youngest people in the new organization ... I think spending time with new people is important ... Because I am busy and sometimes I do not spend enough time with people ... but I do what I can.”

“I have got written project guidance ... I have got project process ... It is developed by (..) the private operator and based on the APM (Association of Project Management) ... I drive that ... I feel quite proud I am working for (..) this organization ... I think we are pretty organized, we have to be.”

“We moved from Parting client to intelligence client through professional collaboration ... It is about people particular knowledge and skills necessary ... We are changing how we work in Q6 ... our supply chain must has the supporting strengths and behaviours ... These are Q6 values and behaviours ... We are using that in the contract with our intelligence client ... Establish

focuses and accountabilities ... act with professionalism and integrity ... Demonstrate understanding and collaboration as well.”

“These are practices influencing successful development of Q6 behaviours ... it has done by one of our consultant ... For this year ... It is about politics, culture, communication, planning and execution, conditions, achievements, learning, enjoyment, visibility and trust ... and this is another thing about leadership, we have couple of weeks ago ... I think we have got technology, we have got all computers ... We have got process ... We have got management getting people to do stuff ... it is the only way to achieve more, I mean through leadership.”

Sub-theme: Proactive Safety Strategy (PSS)

“Safety is about technology ... We have got process ... We have got management to take safety better through leadership ... Management is doing the things right and leadership is doing the right things ... Everyone comes to (..) the airport knows he will go home safe and well go to his family ... lead by example ... get people permission to do the right things ... Pull safety to where you work and think ... Be the safety leader you want somebody else to be for you ... Being in charge does not make you a safety leader ... Demonstrate the right behaviours, you will achieve the level of safety performance that you demonstrate.”

“In construction site ... The important thing is our behaviours ... When I go to site I tell people when they do something right and also when they do something wrong ... Actually I don’t tell them, I get them to the behaviour safety training ... It is not about apology, it is about you getting home safe tonight ... It is again do the right things, it is sort of behaviours ... So that is what I do ... We are 7.5 million man hours without reporting an accident ... So, nobody had a twisted ankle for 7.5 million hours ... Our AFR (Accident Frequency Rate) is currently 0.03 ... (..) The country average is about 0.45 ... So, it is all about demonstration and caring for people and wellbeing ... We have 2 days training, just for that particular project on how to deal with safety behaviours.”

“All site people have to be trained on knowledge for the risk in site ... They all go to site induction ... there is an airport side of thing, a DVD which explain our behaviours, what we expect ... Everybody got that and there is a contractor specific thing as well ... So, normally it is two parts induction ... And it is for everybody in here, 2 days purely safety nothing else rather than how you behave.”

“We have got a number of people in safety team ... a night safety manager, I have full time safety manager who walk around the site ... We have safety team that collect together and make sure that lessons are learned, and shared through the whole community ... They pull together all the contractors in one forum ... There is a safety leadership team, they share what is done in the month, good or bad ... We have programme safety leadership team (programme level) ... We have (..) airport safety leadership team, which is all the directors and all the big construction companies (high level or development level).”

Context

Organization 2: Public Airport Operator

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P1	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:35:30

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

Sub-theme: Habits/Behaviours/Attitudes (HBA)			
Sub-theme: Proactive Safety Strategy (PSS)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P2	Head of structural engineering department	Private Aviation Terminal Project	01:21:25
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“Behaviours and relations and project culture are not different from each other and had to be coordinated, without this, actually you may be very good but your behaviours are not acceptable ... We have designers and we have contractor, they are also a good team members, sometimes once a week we have to get together and chat together, not officially and subjected, but casual to understand each other ... This this something very important, social practises.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“We have induction ... We have to brief new member actually, we have to review with him all those packages, documents of the project as well ... We have to introduce him to other members who are working in the project, let him to be comfortable and we are not different from you and we are the same and let us work together ... If you have any questions we are happy to answer you and at the same time feel free to come and discuss, and you are not just restricted to one area, you may come and talk some other disciplines ... Relationship and coordination requirements.”</p> <p>“Workshop is very important actually ... It is not only construction activities what we have and work on, we are also project management ... You have to have sort of relations with all the disciplines, with all stakeholders, contractors, consultants and everything ... Project management basically is communication, seeking ideas from people regardless who is from, and give people chance to ask and get beautiful and very good ideas from them as well ... If you do not do that you will lost.”</p> <p>P. We can list out that in the paper, but I do not do that ... What has to be done, talk and discuss ... But number 1 is never go to the contractor office, let him go to our office and discuss the problem or issue whatever he might have ... Once you go to his house or office you lose your credibility, you do not have that respect that is supposed to be from him to you ... Because then he will take it relax ‘he is my friend’ ... If you have any problem call him ‘please come’.”</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>“We have safety department ... We call them from time to time to our meetings ... This is a required at the early stages to set up the whole system ... All those kinds of requirements, what is supposed to be done in site, what has to be taking care of, what is the precaution has to be taken ... We seek some kind of input from our safety department ‘please do come and help us out’ ... We call safety representative from time to time, not every day.”</p> <p>“Safety gear has to be implemented obsoletely by our safety department ... We make sure the contractor is comply with boots, helmets, jackets and all of these things ... Our duty is to ask for safety requirements, contractor has to comply, our people has to comply ... The contractor has to comply with that.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P3	Senior Project Manager - Leader of Project	Runways Development of a New Airport - Airfield	01:18:19

	<i>Managers & Engineers (Civil, Structural & Pavement)</i>	<i>Projects</i>	
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“Actually the respect was existing between all of us, the contractor was so cooperative with us, especially in the implementation stage ... We were so obvious with the contractor and always give him his rights 100%, our requirements were clear, the design was ready and clear too, we explained everything in details ... We were so transparent and gave the contractor the freedom where to start ... All these factors develop trust and commitment between us and made the contractor also so obvious and cooperative.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“I don’t think we have experienced such thing (Induction for new members).”</p> <p>“Yes we had workshop every 3 month ... We visited the construction in particular area and reviewed the design drawings ... Department head manager and his engineer were attended those workshops.”</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>“Actually we have not made any development on the safety sort of thing as it is standard ... We have managed to develop the lab checklist, which we use for testing purposes.”</p> <p>“Form the initiation stage we have allocated safety department, they were under the supervision of project assistant director ... Now it has merged with the security department ... We have also assigned a (..) External safety engineer with his team to be responsible for project safety activity ... He was actually our reprehensive on site plus (..) in-house safety staff .. The contractor has also his own safety site engineer reprehensive.”</p> <p>“I think there was safety training, but honestly I am not involved in that ... As safety procedure there are two safety units in the airport; airport safety and security which is under airport management structure and the other one safety and security management for airport and airfield operational matters ... We were actually dealing with both of them.”</p> <p>“There was a safety pack for every individual visiting the site ... It includes boots, helmet, jacket and so on ... This was organized by our safety reprehensive ... We, project management, were taking care of all of safety signs, posters and instruction on project site.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P4	General Director of Engineering Affairs - Domestic Airports	Airfield Development Project – Domestic Airport	01:14:21
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“If you adopt all these principles and deal with people with that respect, so you will get that in returns and being as a project manager your team will be adopting your behaviours ... I give all my respect to various different individuals in the project within all different levels ... You can get their work commitment and healthy working environment by doing that ... Everyday early morning I informally call the contractor and ask him about the site and all his related work, get all the update as well, ask about our agreed actions ... He will always make sure to check everything daily to be able to talk to me ... You have to check all personnel whether yours or contractor team ... Check every aspect of the project.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“We had not got new engineers ... If so yes sure, we do that definitely.”</p>			

"We had workshops with project architect and other related people ... We can decide how we going to apply that on the building ... We always had many workshops.

"We had developed a simple guidance at the time ... We have tried now to consider those areas and make some development and changes."

Sub-theme: Proactive Safety Strategy (PSS)

"I had a safety engineers, from the contractor and consultant side ... I gave them our safety requirements of construction and engineering form our standard ... I was in charge to check our standards and requirements and also whether they are following that or not in terms of meeting the requirements and wearing safety gears ... I had not have safety representative from our side."

"The contractor and consultant were arranging safety trainings for site workers."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P5	Senior Engineering Project Manager - Domestic Airports	Development of Seven Runways	01:28:10

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

"Actually within a working environment all that must be existed, everyone should be transparent and clear otherwise it will not work."

Sub-theme: Habits/Behaviours/Attitudes (HBA)

"If this happen in my team I am responsible to do that ... In the contractor or consultant side it is their job ... I have to explain all project-related to new members ... But the previous member have already understand my way of doing the business, communication, report, following up ... I am not willing to do that twice, sometimes you force to do that, anyway when so I will pay for that, and how much I do not actually know.

"If workshops needed yes, why not."

Sub-theme: Proactive Safety Strategy (PSS)

"We had not got or implemented proper and effective safety strategy especially with regards to site workers ... In this project, the most important safety rule for us is that making sure individuals/site workers do not access prohibited area in the airfield, along with any vehicle ... We prepared for that by following safety guidelines."

"We did not let any worker to start his task on site unless we took precaution for all possibilities ... Then allow him to access an area ... Those precautions must be secured and it is one of my project team responsibilities.

"Safety gears and safety requirements, we have here security and safety centre ... They have just effectively considering those matters in our project ... We were in charge of this not the SSC, as they just care about individuals' precautions and behaviours on constriction site."

"I prefer that their representative visit us prior starting site's works and check that everything is OK, ready and site is safe ... Then they give me the green light to proceed ... During the project they are already applied regular inspections/site visits to check safety procedures ... They always report to me."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
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O2P6	Senior Project Manager – Communication & Control Systems	Totally New Airport Information Communication Technology of the New Airport	01:10:45
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“They all respect me because of what I have delivered and designed, the trust has established ... We faced at the beginning a difficulty because we do not know them (consultant and contractor), we develop slowly the relationship ... We presented to them what types of problems we have and they have, and we took care of their comments ... The trust has established with them and now all the equipment has been delivered .. The more professional you are with them, the more commitment, trust and respect will be ... Everything was very clear ... All documents have handed in to them.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“In our team yes we have ... Any member who was with us, 17 -18 people were with us, when they joined the team we gave them an introduction of the system ... We gave them also written information ... We took them to the site and show them around, and also they visited the project consultant as well ... We have also visited expeditions ... I have some presentation prepared for some people ... I list the system that we are handling ... They are familiar about what have been done in the airport.”</p> <p>“I do not have a guide ... I recommend to (..) local young engineers to go to training courses.”</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>“We have safety standards ... We have safety equipment.”</p> <p>“There is a site representative from the contractor ... from (..) the public operator we have our own people, those people are from the airport, safety people,</p> <p>“We provide safety training for some department and also for the contractor.”</p> <p>“Actually it is not my area. But all safety gears are provided ... They provide us with the helmet, shoes and so on ... The contractor provides these to our team.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P7	Senior Project Manager - Deputy Project Director – New Airport Airfield Development Project	Totally New Airport – Planning and Construction	01:10:42
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>“Actually respect comes from experience, because you do not know your colleague until you get clash with him and then you know his mentality and how is he behave ... After that you start to develop that kind of behaviour with him whether trust, commitment or respect.”</p> <p>“No I do not have any particular factor actually, I just use my own skills.”</p> <p>“We do have transparency, especially with the contractor and other stakeholders as well ... We need to be transparent.”</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>“Yes definitely we have induction for new members.”</p>			

"We do have workshops with project team ... We let every discipline to put their own scope, we consolidate ... This go to a coordinator in that area who will coordinate with other disciplines to collect all data ... All data to be collected together and make a final report on that ... This is related to project scope, project element, the construction activities, the design or whatever ... We put it in sequence."

Sub-theme: Proactive Safety Strategy (PSS)

"We have to coordinate with people who are related to safety ... There is safety related to us and the contractor directly ... There is safety related to the users and the airport as a whole ... There is safety related to the security ... We have to consider all of that ... I have gathered all departments' requirements to apply it on the safety."

"We have one from (..) The public operator and one from the contractor or consultant ... They have their own safety guy and we have our own ... Ours is from the department of safety and security."

"Not really, because what we do is we already hired people with knowledge, if there is any training it will be for young (..) local engineers."

"It depends again, the contractor is in the site and has to prepare and provide everything for us to go and visit the site ... We have our own tools to visit the site without even advice the contractor ... We just go for random check to insure everything is ok ... If there is an official site visit that engage and coordinate with the contractor."

"Yes sure it is part of the contract, the contractor should provide site posters and signs and other related."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P8</i>	<i>Senior Project Manager – Head of Civil Department</i>	<i>Totally New Airport - Airfield Facilities Upgrade Project</i>	<i>00:52:10</i>

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

"If there is no uniformity of personnel and no cohesion, where you have a multicultural or multi nationalities working of different culture, all that will not exist."

"in terms of commitment and respect, you have to make the person understand that he is part of the team, if he screw up we all fail ... That is incentives again, because we are from different countries and if there is satisfaction in job, the job pays well, if there is no job then, you need to succeed in the project, so that they keep you for the next project and then you have to learn to adopt to each other ... In the private industry there are bonuses, but here in this organization there is not."

Sub-theme: Habits/Behaviours/Attitudes (HBA)

"No I wish they had induction for new members but they did not, it is like an orientation but no they do not have it."

"We had workshops ... We had design review workshops, but nothing like workshop trainings ..."

"Project guide is there actually but not activated as it should be."

Sub-theme: Proactive Safety Strategy (PSS)

"In the field they have health and safety guy inspector, we promoted HSC environment as much as possible ... We encouraged people to wear proper safety gears and the contractor was also inspected for complying ... This was one of the requirement of the project ... We had one from

our side and the contractor of course had his.”

“They have proper regular training courses where you are required to take them ... But in (..) the public operator construction business I think we had it when we get this airside licence ... In which They teach you like a 2 days course, they teach you how you drive, safety thing to drive airside, because of the different equipment ... One time there was a course of hazard materials, but not anymore.”

“I think people who were involve in that fuel lanes, they were giving something like safety booklet but not us, because they have different safety requirements.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P9</i>	<i>Senior Project Manager – Head of Contract Control Department</i>	<i>Totally New Airport</i>	<i>01:16:52</i>

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

“Transparency is so high between team members ... We have no boundaries between us as all project information shared between us.”

Sub-theme: Habits/Behaviours/Attitudes (HBA)

“Actually it depends on his field specialty ... We have a process to involve new members and make them familiar with project team ... The beauty of our team environment that we all cooperate and share project tasks regardless of different disciplines ... There is no limitations within team environment unless associated with very special tasks.”

“One of the contractor responsibilities is to induct project subcontractors; our task is to monitor how they execute their works.”

“Actually we have scheduled time for workshops, as we have something called master project schedule “for the project, which indicates all project activities including workshop arrangements.”

Sub-theme: Proactive Safety Strategy (PSS)

“In our projects we have this ‘safety is first’ ... Which has introduced by (..) the public operator ... Before the contractor start project constriction works, he must provide us by organizational structure, safety structure and safety policy and procedure ... After receiving the contractor documents I can proceed with amendments according to our safety requirements ... We have a huge section in our contract regarding safety ... We have obtained safety documents (safety section) from (..) external company during the development of one of our previous airport projects ... We have developed also this document according to our needs ... Safety requirements differ within each airport and also each project within all airports ... We adapt safety standard for each project according to its criteria ... Safety and security is a must in airport projects.

“We have safety and security department and they play their rule in each project ... They are authorised to stop any project or individual who doesn’t comply with safety requirements ... They have also a booklet for all safety requirements ... Our safety site representative is from safety and security department and he is responsible to monitor site safety activities.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O2P10</i>	<i>Senior Project Manager – Head of Mechanical</i>	<i>Totally New Airport</i>	<i>01:16:52</i>

	Department		
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>"All these values developed verbally as there is nit any clear agenda for them."</p> <p>"Any information can be shared and the transparency level is so high ... This due to the cultural aspect of (..) this country and also to the respect that shared between people."</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>"No, they assume people assigned to these types of projects are already expert and knowledgeable so no induction is needed."</p> <p>"I have not experienced any workshop or session that organized for updating information purpose."</p> <p>Due to culture variations, the only guidance we have focuses on personal and cultural aspects."</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>"I think this is based on each individual and his self-discipline."</p> <p>"All these are available on written documents but when you are on site it's really based on individuals respect."</p> <p>"Safety officer is available but not effectively and efficiency accomplishing his work as he, basically, focuses on few aspects (clothes and boots)."</p>			

Context			
Organization 3: Private and Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P1	Project CEO	Totally New Airport	01:35:30
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>"By getting closer to everybody involve in the project and through the verbal communication ... Building a good relation (friendship) facilitates many things ... I encourage the use of 'we' along with giving the feeling to other party that I am here to help and support you and not to monitor you ... They do not hide problems when appear ... We are trying our best to make the transparency very high ... I am trying to absorb bad reactions of some parties to make the project going smoothly ... Neglect bad people behaviours and attitudes and react in a positive way, this will improve the relation over time including trust so you can get the most from them ... Positive attitudes will always bring positive results ... Blaming is not a good practice for teamwork."</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>"Any new member involved will have a brief of the project, strategies, history and structure of the company, goals and major concerns ... We are dealing with airport project which got a high priority and value among government projects; it is the gate of the city."</p> <p>"Yes we have several workshops (design, materials' selection, project schedules and other critical issues)."</p> <p>"Actually we have not got project guidance, as project team aware of what has to do."</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>"We ask the contractor to provide health and safety requirements according to the airport"</p>			

standards and regulations, where they have to be approved ... There are health and safety supervisor at site from the contractor side ... The whole procedure is monitored by project consultant ... We want to have 'zero accident' ... We are providing all the safety requirements for employees, labours and site equipment ... The site is provided by clinic and ambulance facility ... Site employees and labours are aware of those steps and procedures ... Our role as a client is to monitor and they have to maintain our contract requirements ... All safety equipment (cloths, boots and helmets) are provided by the contractor."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P2</i>	<i>Deputy Construction Project Director/Project Control Manager</i>	<i>Totally New Airport</i>	<i>01:37:37</i>

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

"We are working here as one family and let us be transparent and anyone has any problem he just need to raise it ... Do not hide anything as we are very flexible ... We encourage people to respect each other ... We make sure that we do not have any miss among us ... We kill any problem straightaway as we bring the guys who did the trouble and then we just finish it ... We keep remind them that this project will be a great success for all of us."

Sub-theme: Habits/Behaviours/Attitudes (HBA)

"I have explained that we do have comprehensive induction for new comers and we implement workshop sessions."

"When I moved to this department I have moved also my experience to it. ... Transfer my experience to the staff there, I sat with them many times and guided them ... We worked together and in many case I have explained to them how we do things right ... We should keep learning ... We share our experiences and then we come up with a good and agreed method/system for us ... I brought my experience to the department and they should follow and implement ... We work together as a really good team."

Sub-theme: Proactive Safety Strategy (PSS)

"There are safety officer and trainer on site ... They represent both joint venture companies ... The head of the safety department is the safety manager ... We have a sub-contractor security company and they are taking care of all security issues on site ... We have also inspector for the environment and another one for safety and we have clinic in site as well with a doctor ... We have a contract with a hospital to have full time doctor including 2-3 nurses, ambulance cars and all equipment."

"Safety department provides all site equipment and they are responsible for that ... They also responsible for safety test and they keep an eye on all people working on site."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P3</i>	<i>Senior Project Manager – Leaders of Project Managers of IT Airport Construction Project</i>	<i>Totally New Airport</i>	<i>01:16:11</i>

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

"Me and the others have very good relationship, respect and commitment ... Be open and truthful besides having the required knowledge ... They come and ask questions about so many

different things, they come and get your opinion about what can they do ... Such environments develop respect and commitment.”			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
“Yes we have this ... We have induction for the project, HSSE (Health Safety Security and Environment) kind of induction ...			
“No we just have what I mentioned (MTR and ATKINS).”			
Sub-theme: Proactive Safety Strategy (PSS)			
“Actually we are not involve in this and aware of safety issues ... My team is not doing the site works.”			
“Safety site representatives are from (..) the CM and also subcontractors.”			
“Yes we receive different safety trainings from safety department.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P4	Senior Project Manager - Quality Assurance & Control Manager	Totally New Airport	01:32:38
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
“I like to set and see all people in the project not only my group, also people from construction site ... I try to help them at the beginning, if I can mix different subjects that mean I can see very easily than others ... If they listen to me, which most of them do because my approach is very friendly, it is ok ... Otherwise I use my authority ... First of all the friendly approach ... Relationship is so important; this is a good development way for everybody.”			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
“I explain the project to new members and give them some project’s information ... Also about the job and myself ... I always say that you can come to me and we can discuss and share anything ... When I joined this project my project manager has explained the system of this project and who the people in here are and what our responsibilities ... I do more, as of course they need more ... They need much more time to understand I give them that.			
“We use the quality manual of this project or it is called PCP (Project Quality Plan) ... It got all explanations and we are trying often to revise this manual ... Actually it is our law in general.”			
Sub-theme: Proactive Safety Strategy (PSS)			
“We are trying to catch international standard of safety and quality, because ... Any kind of airports’ projects have to have high safety and quality procedures and standard.”			
“We have HSSE (Health Safety Security and Environment) department who are responsible for safety practices on construction site.”			
"Safety training is also organized by the safety group ... And at the beginning I have received my safety training ... There is a training scheduled and they calling and inviting us, for one or two hours ... Safety is more important than quality in the international standard, but here we are trying to make a balance between them.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P5	Senior Project Manager - Project Finance Manager	Totally New Airport	01:11:56

Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>"My own position was single and did not involve with no subordinates ... I was the contract manger of the project and had no other members with me, it was just me."</p> <p>"Transparency factor was a 100% exist within the project."</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>"Actually there was special information to be sent by email to every new comer which he should read and absorb before he join the team and start his work."</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>"Safety was properly controlled and managed ... There was HSSE (Health Safety Security and Environment) department and it was managed by one of (..) the main contractor specialist in this field ... Their job was very professional."</p> <p>"We have a safety training for each member at the beginning and then in a periodical basis from time to time ... Those trainings were prepared by HSSE department under the supervision of the (..) the project manager."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P6	Senior Quantity Surveyor Manager	Totally New Airport	01:05:57
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>"Actually, they have been built from the begging, all of us understand that our management team respect people and their works and have commitment to the project and people ... Everybody have to act accordingly ...</p> <p>"The nature of this project actually makes a huge different, as every party behave as it is his own baby and work according to that."</p> <p>"Transparency is very high ... Sort of boundary must be existed ... Actually it is not a boundary this should be in the work place in order to have control over people you should keep limits or work frame for each individual department, so it is a work frame not boundaries."</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>"So far, I believe there is no induction for new member ... I do not think there is new members."</p> <p>"Yes there is a guide ... In fact this project for me is a unique project as it is a joint venture ... Even the project culture, environment and the way of management or how things are moving is little different ... The direction here is that we have to follow contract basis and concentrate on project management method."</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>"What I have understood in here is that safety is number one and we target to finish the project with zero incident.</p> <p>The head of health safety and environment, from (..) the CM side, is responsible for all safety-related ... Health safety and environment department provide safety equipment to project stuff and other people."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length

03P7	Senior Project Manager - Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>"I always, especially at the beginning, check their jobs and coordinate and communicate very closely with each team member ... By doing this I think I can develop these factors ... I let them see very often that I am open, close to them and always there for them ... There are no boundaries between us it is an open environment ... I never tell them you should behave like this or that and it comes naturally."</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>"This is one if the hardest situation ... New arm or new leg at the beginning it is very strange and difficult. When they arrive I adopt my own style ... I introduce the new member to the team and make him comfortable at his place and with all equipment including devices ... I bring new member and work with the team all together."</p> <p>"Actually yes I have my approach, I read too much and try to implement management tips on my work ... Particularly on how humans are organized across the business and on the subject of management theory and practice ... I follow also Harvard Business Review."</p>			
Sub-theme: Proactive Safety Strategy (PSS)			
<p>"Actually I have not seen any accident or any situation on site ... I feel very comfortable when I go to site."</p> <p>"HSSE (Health Safety security and Environment) leader is the key person, he is from (..) the CM side, and also other members form Quality Assurance (QA) and Quality Control (QC) departments ... Both departments have their own project manager but there is a leader who lead them."</p> <p>"(..) the CM company, the HSSE department, provide all safety gears."</p> <p>"Yes they give us a safety training here on site office ... I had it just one time."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
03P8	Senior Project Manager – Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme E: Project Culture (PC)			
Sub-theme: Relationship Values (RV)			
<p>"HSSE policy that signed by our project director plus senior project managers ... It builds our comment to work and organization as well."</p> <p>"There is some boundaries. And actually these boundaries enhance the performance of people ... Construction site is only for relevant people ... If responsibilities shared with other people, duplicated tasks will appears."</p>			
Sub-theme: Habits/Behaviours/Attitudes (HBA)			
<p>"We have multinational people and languages vary between team members ... Before going to the project site everyone should take project safety induction ... Following that an assessment of how they know and what they know about the project ... All scores pass to admin department and they will issue individual ID ... Once he has the ID only can go then to the site."</p> <p>"This is for all people going to site ... People who work on site have a comprehensive induction"</p>			

for more than two hours ... Safety induction is there ... For visitors we only give printed information."

"We are only following the international guidelines for health, safety and environment (international safety standards), which is part of our HSSE plan."

Sub-theme: Proactive Safety Strategy (PSS)

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P9</i>	<i>Senior Project Manager – Design Project Manager</i>	<i>Totally New Airport</i>	<i>01:15:37</i>

Intension

Theme E: Project Culture (PC)

Sub-theme: Relationship Values (RV)

"Because there is a clear structure of responsibilities, if someone did not do his work you will know ... There is also a close monitoring ... If there is any problem with anyone you will immediately know that he is not committed ... Everybody has enough idea that he must be committed and respect others in this project."

Sub-theme: Habits/Behaviours/Attitudes (HBA)

"In here yes, I do explain the history of the project ... It depends on his level actually ... Even in the lowest level, I do gather them and explain generally what the project is and what we have to do and deliver, as they have to know ... I send them to the site to see the project progress and so on ... They have to know why they are doing those amendments not just in 2D dimension ... I do this always."

"We do not have project guidance."

Sub-theme: Proactive Safety Strategy (PSS)

"Project safety team makes induction for all project members ... They have to get all personal safety gears (boots, helmets, etc.) from the safety department."

14.2 Theme E: Project Culture - Data Interpretation

14.2.1 Organisation 1 – Private Ownership Structure

Project culture is well defined within O1 at its different organisation and project strategic levels, and with regard to the project team and other parties involved. Culture dimensions are concerned with how the organisation operates, the expectations and all employees' related requirements in terms of managing information, delivery and handover methods, safety, cost and quality management and behaviours and relationships aspects (O1P1). O1P2 stated that project culture was part of the NEC3 contract type, which was developed and defined at the project "kick off" meeting of all key people. He commented, "I have never been part of something that is taking a structure approach to inducting people into a culture." O1P7 mentioned that values and principles contribute to an environment of success. Following the development of Q6's development plan, future organisation plan, O1 has moved from parting to intelligence clients through professional collaboration, which is all about people's particular knowledge and skills. It is about politics, culture, communication, planning and execution, conditions, achievements, learning, visibility and trust (O1P10). Project parties must have the support and understand project behaviours.

Building relationships is how project managers work in O1 (O1P5). O1P6 always encourages open and honest discussions, integrity and listening to the views of people all the time. O1P7 stated that a project manager should show commitment himself and encourage team members to share their learning experiences. O1P8 emphasised the importance of developing honesty and open culture regarding what people do, as 50% of accidents are due to people's behaviours. Respect, openness, commitment and working with the team are the main behaviours that O1P1 and O1P9 focus on, and which are crucial when putting a project team together (O1P4).

New member induction is a common practice in O1, especially when new managers are assigned to different project stages (O1P4 and O1P5). O1P5 stated that contractors are also involved in these types of inductions, during which the background of the project, project status, expectations and all information relevant to the project are explained. In addition to this, people know their project structure, team members and project objectives. These inductions are not only for new members and contractors, but also for core team members, the client, project managers and internal staff (O1P6). As a result, there is a clear induction

plan for all people (O1P6, O1P7 and O1P8). O1P7 stated that “there is a formal induction, as everyone coming into the project needs to be formally inducted.”

In terms of project guidance associated with project management practices, O1 has developed its own version, based on APM (Association of Project Management), which organises all management processes (O1P10).

Project safety strategy is fundamental in O1. The contractor is responsible for the actual health and safety procedures on site; the in-house project manager’s role – whether in person or through assigned safety advisors and representatives – is to make sure that this is done and that everybody is safe. There is a safety leadership team at project level which works together and ensures that all related lessons, good or bad, are learned and shared throughout the whole community. At the programme level there is a programme safety leadership team which comprises all the directors and big construction companies. For O1P3, “safety is number one priority and it is considered in everything we do in the most dangerous environment that we have here.” The common view in O1 is that if people follow correctly safety procedures, everything else will be successful and a project of distinct quality delivered on time. All technology, tools and methods that ensure a safe working environment are in place, and project managers and all individuals need to work on their behaviour (O1P6 and O1P10). O1P8 mentioned that in the airfield there are other safety related matters, which differ from the normal construction safety issues that are familiar to everybody.

In order to ensure that everyone is safe within a project environment, various forums, workshops and training are arranged to discuss safety and safety leadership (O1P7). “Behaviour safety is about doing things right” (O1P7). Everybody in a project must complete a two-day safety training session, which is focused on how people work in the airport and deal with safety issues. An additional session is for contractors on specific safety procedures (O1P10). This is because contractors who are new to the airport need to understand basic safety matters; they are not always clear about the different environment in which they work and what they can do (O1P8). Everyone involved on site is fully aware in terms of the PPE (Personal Protective Equipment) that they need to wear (O1P9). Various procedures are associated with getting access to the airside, driving on the airfield and delivering project equipment to the project site (O1P7). O1P4 commented, “I was in the army before this, I do not think the army is as advanced as the private operator in terms of

safety. It is quite a learning curve for me.” O1’s safety standards have been developed by its contractors. However, project contractors have meetings on a regular basis, in a workshop environment, in order to develop safety standards according to advanced technologies and lessons learnt from previous project experiences (O1P6).

14.2.2 Organisation 2- Public Ownership Structure

Owner’s targets and requirements are clear to the design consultant and contractors. Respect and transparency are also evident. O2P3 referred to the fact that all these factors had developed trust as well as commitment between the parties involved. O2P4 suggested, “if you adopt all these principles and deal with people with that respect, so you will get that in return and being as a project manager your team will be adopting your behaviours.” O2P8 stated that as they work in a multicultural environment, project managers should make individuals feel that they are part of the team, in order to increase their commitment and respect. O2P10 further observed that within O2 there is no clear agenda for relationship values; what exists in the environment has been developed verbally or through project managers’ skills and experiences.

Induction for new team members was provided in O2P2, O2P6 and O2P7 projects. In such cases, the project manager reviewed the project packages, introduced new employees to the team members, explained the relationship and coordination requirements, took them to the site and gave them written information about the project. O2P6 prepared an induction presentation for his new members. O2P5 was responsible for any new member joining the team. However, O2P8 stated, “I wish they had induction for new members but they do not, it is like an orientation but no they do not have it.”

There is a lack of workshops for information updating purposes (O2P10). However, all workshops are related to project design and construction activities (O2P2, O2P3, O2P4, O2P7, O2P8 and O2P9).

An in-house safety department is responsible for safety-related matters, in terms of providing safety gear for site individuals and visitors. A project team’s safety obligations are to encourage people to wear proper safety clothing when on site, and to ask contractors to comply with safety requirements (O2P2 and O2P8). A safety site representative from the

safety department is responsible for mentoring site activities. In some projects there is only a safety representative from the contractor and consultant, whereas in other projects an external safety engineer is assigned to support the in-house safety team (O2P4, O2P6 and O2P6). As O2P5 mentioned, “we did not have or implemented effective safety strategy, especially with regard to site workers. In this project, the most important safety rule for us is that making sure individuals/site workers do not access prohibited area in the airfield, along with any vehicle.” A project team deals with three different safety departments regarding, first, construction activities, second, the users of the airport as a whole and, third, security matters (O2P3 and O2P7). O2P10 stated that safety standards are set out in written documents, but on construction sites safety behaviours are based on individual self-discipline. However, there is no scheme for safety training in O2.

14.2.3 Organisation 3- Joint Public-Private Venture

Senior project managers of O3 consider highly the relationship values among project team members. An official procedure for developing commitment, trust, respect and transparency does not exist. However, most project managers play an effective role in their departments, in terms of development. This is through verbal communications and building a good relationship with others. O3P1 always encourages the use of ‘we’ and emphasises the importance of supporting others. O3P2 underlined the fact that project team members work as one family, so transparency and respect develop naturally. Due to the joint-venture agreement and both parties’ interests in future operations, he always reminds project members that project success is personal success, which helps develop good relationship values. O3P3 was of the opinion that a project’s healthy environment including good relationships, honesty and managers’ approachability developed respect and commitment between team members. For O3P4, “relationship is so important”; therefore, he listens to people and is friendly with all individuals within the project, not just his department team members. These values are built from the early project stages, as the upper management team respects all people and always shows commitment to the project and people, so everyone acts accordingly (O3P3). He also mentioned that, significantly, the nature of this project means that these relationship values are cultivated. Working closely with team members and being open and always there for them is an effective approach to develop commitment, trust and respect (O3P7). Project structure and responsibilities are well

developed and defined, so all individuals are aware of each other's role, which ultimately develops their commitment (O3P9).

The O3 project environment is open, so transparency is very high between project parties (O3P1, O3P5 and O3P7). However, O3P6 suggested that “in order to have control over people you should keep limits or work frame for each individual department, so it is a work frame not boundaries.”

Workshop sessions and comprehensive inductions are available for new members joining the team. This includes a brief of the project, associated strategies, history, joint-venture structure, goals and objectives and major concerns (O3P1, O3P2, O3P4, O3P7 and O3P9). In addition to this, specific project information is sent to every new comer before joining the team and starting his work (O3P5).

Different departments have various guidelines and standards that are relevant to the type of work which needs to be followed (O3P3, O3P4, O3P6 and O3P8). However, O3P2 organised different sessions with team members in order to share experiences and to highlight the right work behaviours. O3P6 stated that as a project's nature is unique, in terms of culture and management practices, project contract and management method are an effective guide for all members. O3P7 follows the Harvard Business Review in terms of management theory and practices, and so adopts these ideas in his work and transfers knowledge to team members.

The contractor is responsible for health and safety procedures within the project. His site supervisor, who represents the joint-venture project team, manages site safety activities with a sub-contractor supervisor. Site safety is monitored by a consultant supervisor who is assigned by the project client (O3P1 and O3P3). The client's role is to monitor safety procedures and the contractor has to maintain contract agreement. Security matters on site are handled through a sub-contractor security company. O3P4 mentioned: “any kind of airport project has to have high safety and quality procedures and standard.” In O3, safety is a priority and the project team aims to complete the project with no accidents (O3P1 and O3P6). “I have not seen any accident on site” (O3P7).

Safety induction and safety training session are compulsory for project team members and other people involved in the project. Safety training is two to three hours long and organised on a periodical basis (O3P3, O3P4, O3P5 and O3P7). Construction site visitors only receive

printed safety booklet (O3P8). The project site is supported by a clinic facility; a contract agreement has been made with a hospital to provide a full-time doctor, three nurses and ambulance cars (O3P2). The health and safety department provides all safety requirements and safety gear (O3P2, O3P6 and O3P9).

15. Appendix O

Interviews Data Description and Interpretation: Theme F

Appendix – O

15.1 Theme F: Internal and External Communication - Data Description

Context			
Organization 1: Private Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P1</i>	<i>Senior construction project manager – programme manager</i>	<i>Refurbishment of Terminal Departure Lounge</i>	<i>01:28:46</i>
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>“We have very established communication structure ... We have a document management system which called Documentum ... At the end of the projects, the organization in handing out the project has to make sure provide evidence, loaded in to the system all of the drawing information, all the key information from their side ... As a senior project manager I have to make sure all of my documentations through the project have been loaded in to there ... Formal documentation system ... We have monthly project management communication dashboard where we communicate our progress through the schedule, the cost plans, quality reporting ... If it is not verbal communication it has to be formally structured ... Then we have the various forms, minutes, to keep track of decisions that have been made ... Drawings are prepared and shared using Documentum ... It transmitted to all the stakeholders and then they have the opportunity to review it, comment on it and goes back in, hard drawing signed off by myself as a project manager ... make sure all specifications, drawings, manuals, schedules etc. are managed, logged, controlled and stored.”</p> <p>“It is managed by a programme management office (PMO) ... Core organization ... The project manager is the one who has to load the information, he is responsible to load the information in there, but this delegated out to suppliers so they can load their information in ... The project manager has to make sure it is over there, in signing off the project at the end, and will not sign it off if one of those documentation is not in place.”</p> <p>“Anyone has a stake on the project has an access to Documentum ... Documentum is the library where everything store and information is shared via Documentum, but those documents might be emailed to certain people that ultimately ... The library shelf as it where is Documentum.”</p> <p>“We do in other system, another variety internet bases called BROX which we use for sharing with the airlines’ stakeholders, stakeholders programme board minutes are loaded on to BROX for people to then log in over the web, it is like a secure mean of accessing the data ... Some other web-based type systems for sharing information, but the actual official one in the project is Documentum.”</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
“It is just a structure, and it is not the communication have to go up to each step, we are not quite a hierarchy on that stage.”			
Sub-theme: Communication Documents (CD)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P2</i>	<i>Senior Construction</i>	<i>Minor Construction Works</i>	<i>00:52:45</i>

	<i>Project Manager - Portfolio Manager of Asset Replacement & Commercial Capital</i>	<i>Programme: Office Buildings, Roads Networks – Escalators</i>	
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>“We have official mechanisms for communicating, document specifications, minutes and everything it called Documentum ... It is not an easy system to use, I would say it is more of an archive that a communication tool ... If it used in its full extend it does do function we needed to, but the reality people usually have supplementary communication methods to communicate the information, emails, verbal, phones and hard copies ... People know how to use it but it just slow, there is so much information in there, finding that is an art ... On bigger projects we have document control department.”</p> <p>“External communication will be through working groups ... It will be through the formal stakeholder board meetings.”</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
<p>“We tend have fairly flat structures ... They will typically follow the organizational standard ... There will be a director and there will be a programme manager and there will be senior project manager and then project manager and that is set ... There are four levels in that structure ... The flow of the information goes both ways ... There is a lot of top-down and we have a monthly reporting cycle where we provide all the information back up and we go and talk about those projects.”</p>			
Sub-theme: Communication Documents (CD)			
“All that is through Documentum.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P3	<i>Senior Project Manager in Direct Support of Strategic Initiative – Pre- construction Activities</i>	<i>Strategic Construction Projects Perspective</i>	01:25:56
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>“We have a very formal method of communication ... Information systems which contractually all of our suppliers are required to use it ... We use a software system for managing our documents, it is called Documentum ... We have also a share point system for our internal project information and we have another system which I cannot remember the name of it, which is a Drop box system for externals like airlines and things, it is called BROX ... All of the project documentations, so drawings, briefings, schedules, reports, study reports, survey reports and everything that produced as part of a deliverable from the contract is uploaded into the suppliers file on Documentum, and it is assigned specifically to the project members.”</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
<p>“It is on me directional ... With project stakeholders we are almost communicate through emails, telephone calls, face to face, meetings, workshops, formal sessions, minutes, decisions and actions logs.</p> <p>“It is through all of those systems ... It depends where the required information is ... Every single aspect of the project is filed and returned on whatever is the system is appropriate for whatever we have been doing ... Most systems are databases, so databases are not efficient are they ... It relies on somebody using it.”</p>			

“The suppliers are contractually, part of their contract they will use it ... Anybody who we are buying a service from whether that is a construction service, design service, consultancy service or anyone who is in contract with us, part of the contractual agreement or part of the employment requirements is prescribe information around the use of our system and upload the information and the distribution and sharing of information on our system ... You have to be quite process orientated in a bit formulate about making sure that people are managing information in the right way ... I intend to make sure that it is somebody’s job, as a project manager just cannot set on top of that, you have not got the time to do ... It needs to be clear to people what is required and you have to have somebody managing it.”

Sub-theme: Communication Documents (CD)

“It depends which kinds of information you need ... Most likely all through Documentum.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P4</i>	<i>Senior project Manager - The capacity Optimisation Programmes, Airfield Team</i>	<i>Airside Physical Facilities – Dealing with Snow in Winter Condition</i>	<i>01:19:40</i>

Intension

Theme F: Communication (C)

Sub-theme: Communication Strategy (CS)

“I will say this is why we are meeting, and this is the outcome I am looking for ... I think at (..) the airport we have a meeting culture and you will have a million meetings in your dairy every day ... I am trying to say very clearly this the objectives, this is the outcome and so if I invited somebody he does not to be there then they know what I am looking for and then they can make that decision.”

“With the contractor, particularly, we use system called Tender Smart ... We use that as a method for formal communication during the tender process, it means all communication are recorded and that takes you up to contract award and then post contract award we use 2 systems ... Another system called SEMAR a bit more iterative allows you in the contracting to have a conversation ... I can present a risk for the contractor and put it in SEMAR and then we can have a discussion through SEMAR about and it is all recorded ... They can do all of their monthly applications for payments, submissions and programme submissions and all that sort of stuff can be sent through SEMAR ... So, Tender Smart sort of pre and SEMAR post contract award ... Less formal stuff, you know, just Outlook.

“During project we have got this Documentum system and not well formally transmit or formally record that people have in sent the document ... There is still a quite bit of Documentum phobia out there, people do not like to use it ... Formal software package for storing information and making sure everyone got the most recent version, but people still send stuff around email ... We are using also share point on our hub system ... Documentum is very slow ... If I want to send a document to you, there are a number of processes that you have to go through to be able to get it to you and it is very slow, it generates codes for a project which is based on its location, where it is on the ground or above ground level ... What the type of drawings is whether it is general arrangement or long section ... Then serious numbers based on ... To generate that code it takes you a bit of time, if you have to go through all these system and select what you want ... It is just a bit slow. I think here everyone is busy and they want something fast.”

“Externally we communicate through email or face-to-face.”

Sub-theme: Communication Flow and Instruments (CFI)

Sub-theme: Communication Documents (CD)			
"As I understand through Documentum."			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P5	Senior Project Manager – Fast Development Projects	Separate Temporary Terminal	01:13:47
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
"A lot of it was face to face ... We use Documentum for the drawings which is our document management system ... It was a little bit different in that, because this was a temporary building, we did not have to load everything."			
Sub-theme: Communication Flow and Instruments (CFI)			
"I was in the middle between the suppliers and the contractors and then our own management team and (..) an external party who were linked into them ... We were working very closely with our (..) the event management team as well the key airlines and the Airlines Operators Committee."			
Sub-theme: Communication Documents (CD)			
"Documentum system."			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P6	Senior Construction project manager	Refurbish an Old Domestic Lounge	01:05:16
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>"At the start of a project we try to agree with each other on meetings structure and minute meeting of the project ... We agree a plan of what are monthly cycle of meetings structure ... Those meetings we have terms of references, agendas, who attend those meetings, how long those meetings takes, we set roles for meetings as turn up on time and if you not going to turn up let people know, take notes, finish on time, listen, input and if you do not want to be in a meeting do not go ... We try to minimize emails where we can and have an open plan office to encourage people to talk ... Face to face always help ... A phone call is the second method but do not relay on emails ... We have a structure way of managing our information, so we use document management system where all our information goes, so that will be specifications, drawings and meeting minutes, we try to use a document management system which called Documentum ... Commercial information is a bit more sensitive, so got her own system for managing commercial information that is generally from our project management office to where our schedule and cost information ... We have got a structured way of managing our information."</p> <p>"External people we would generally have our meetings with them regularly ... Monthly meetings and actions will get noted from those meetings ... We are quite on a structure way of managing our stakeholders ... If there is any formal request is normally free to structure."</p> <p>"Documentum access depends on who you are, you got access to certain information ... Everyone will get access to all information apart from the commercial stuff ... In terms of team and individuals as well."</p>			
Sub-theme: Communication Flow and Instruments (CFI)			

Sub-theme: Communication Documents (CD)			
"Once we finish the project that information we get transferred to Documentum and (..) the airport Life, and that is where we keep all our information."			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P7	Senior Project Manager – Capital Construction projects	Airside Segregation Project	01:05:57
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>"Various methods of communication, various methods of distributing and issuing drawing information ... again similarly there were different forms and different agendas ... There were the set meetings that were airport specifics or set meetings about project specifics ... Set meetings which were stakeholders' specifics."</p> <p>"We did not have a very good airport wide one at that time, so we used a system one of the suppliers had i think ... And I think at that time we used something called A-Site."</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
Sub-theme: Communication Documents (CD)			
<p>"If suppliers want any document could go on to the (..) the airport system, computer system, they have full access apart from the commercial information ... That possibly was did influence the success of the project, because it is again was very straight forward ... Was not complicated ... We had a system which is simple enough that you make sure that the right information there."</p> <p>"Now It is getting worse ... Because it is a complex system and now there is an assumption that everyone uses it."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P8	Senior Construction Project manager – Leader of project Managers & Project Engineers within Airport Runways Projects	Airfield Pavement Projects (Runway and Taxiway Refurbishments and Prefiguration)	01:16:36
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>"Communication is our biggest failing problem/process ... We have massive of communication, 200-300 emails ... Lots of information in there ... We then deal with contract communication, that contractual communication ... We then have Documentum system to deal with issues of drawings ... The operation guys, the share side, so we share the information ... Actually we have got lots of different things ... We got too many thing, emails, texts, meetings, minutes, verbal, face-to-face and we got all these system based things, project control change and document control share points."</p> <p>"The idea is that to use just one tool to share all the stuff and then everyone just goes in and sees that ... We have 10 different systems to input information and everyone got access to those, and they all valid for particular things but in the outcomes we just have one because it would be a lot better everybody will always go there and see that sort of thing ... If it just one it would be better"</p>			

because everybody will always go there and all the information will be available but we at least half a dozen or more.”

“Well because the CIMAR thing project and project change and everything is required by the contractor ... We use email because the contractor use email ... We use Documentum because the airport wants all these drawing and key documents issued by Documentum ... You got the share thing which is only set up by operation but are not interested but they want to do ... So for me communication is really about all the time talking to people about what they worried about and what they need help with.”

Sub-theme: Communication Flow and Instruments (CFI)

Sub-theme: Communication Documents (CD)

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O1P9	Senior Construction Project Manager – (leader of Project Managers (Security and Saving Operational Cost)	Terminals Security Project: Security Equipment in the Passenger Security Areas	01:43:20

Intension

Theme F: Communication (C)

Sub-theme: Communication Strategy (CS)

“It depends what is communicating ... We use Documentum which is a reference or sort of library of any project documentation ... We are regulated by the CIA it is very important that we keep evidence of everything ... We do need to keep published record of every drawing, every stakeholders agreements and that all goes on Documentum ... You can have different level of permissions to access different documents ... Internal people, who got access probably to everything in that project ... Then there is a list of contractors who have got access to some of that ... Not all of it because some of it is internally sensitive ... Something they need to have access to they have access to.”

“You will send what is called a (transmittal) which is effectively sending a document to a group of people, they can either be from your internal group, external group or you can type in a one-off email address and it will go to them.”

Sub-theme: Communication Flow and Instruments (CFI)

Sub-theme: Communication Documents (CD)

“Documentum is only good as good as the information that put in to it ... We had a Documentum system on (...) previous project, different set up and different folder structure to the one we got now ... It was absolutely diabolical because everybody put stuff in there but nobody knew where it should go ... They just put it where they thought it should go, and what that meant was ... If you try to retrieve something unless you knew what the reference number was it was impossible to find anything.”

“Current Documentum system is better but still sometimes difficult to find stuff if you have not got the exact reference number ... Quite difficult to make a structure for such a wide range of projects that makes it obvious to someone who want to find something where he should be looking for it.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
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01P10	Senior Construction Project Manager – Programme Director of Terminals Projects	Totally New Terminal	02:24:06
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>“The communication here is about people working effectively in different ways ... We are not communicating just in our building stuff, this about we need to cooperate and change the business ... Change the way that people thinking and reacting ... People are working in the same way for 20 years ... So there is a whole team in here, what does it look like, communication processes ... So, this why I got specialist ... I have (me) in there and I have got a built team down there and I have got a number of various people ... Also I have a team there which has 20 people who all to do with operational readiness ... What they do is communicate, they walk around the building saying this the way we doing it, this is the way it going to work here ... The benefits to you ... It is going to be quicker, you going to spend less time ... That is a massive communication and it must be right ... Different messages for different people ... You have got the airlines, you have got the guys in the ground, and you need to make sure there is a link between them ... So, this team out there, what they do for me, they communicate, they have communication plan ... They do more than specifications, reports, manuals schedules, people want drawings, computer files, modelling, how it works, prints out, agendas, minutes of meetings.”</p> <p>“Your successful project is all about communication ... We have newspapers, one/month ... You have got a nice little profile about the person who has been working on the job with a picture ... So, you know what is going on ... I have got people who are ex journalist work in this team ... This little newsletter can go anywhere, CEO level, working level ... It is about understanding ... Above that I have a corporate commence team who deal all the way from minister, prime minister etc.”</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
“So, I don’t think the flow of the information comes top-down it is goes bottom-up.”			
Sub-theme: Communication Documents (CD)			
<p>“We have got Documentum ... So we have a share point ... On the home page you can click from the A to Z ... Departments, development, share learning, process ... If you need any documents, guides ... It is quite simple ... Lesson learns in there ... Every project has to have a post project review of learning ... So, anyone who is doing a similar project can go to yours in the future ... I think it is not perfect, because a lot of people they don’t like searching, they like inventing by themselves.”</p> <p>“This is what we were going through in a meeting last week ... We have the board, we have the airlines, we have the terminal stakeholders ... So, we have got a standard reports from our PMO (Project Management Office) and we have agreed them all ... We have got one version of the truth and then all come off it ... And they all similar ... We have got standard reports for all business now ... We have them in a position ... We are changing and developing them now.”</p>			

Context			
Organization 2: Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P1	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:35:30
Intension			

Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
Sub-theme: Communication Flow and Instruments (CFI)			
Sub-theme: Communication Documents (CD)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P2	Head of structural engineering department	Private Aviation Terminal Project	01:21:25
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>"We have communication with our top management and also immediate bosses and other disciplines bosses ... Once I have a team established and they are coming under my custody, they have to listen to me and not to their boss as this a task giving to us ... Does not mean that we do not have communication with our discipline managers ... We do have but influence cannot be posed ... We are independent task team and we have to get the job done."</p> <p>"The external communication is managed through the in-house coordinator."</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
<p>"Anything goes from the project should go to the project manager ... You should go to the project manager and say I would like to seek some help from my immediate boss ... This is one of the most important thing, otherwise, the whole links will be broken and you will be lost."</p> <p>"The whole team is restricted within a certain criteria that has been done and agreed upon within the teamwork that should be followed ... Does not mean that you cannot talk to other disciplines or other departments ... You should respect the criteria that developed by the project manager."</p>			
Sub-theme: Communication Documents (CD)			
<p>"These are tools of communication and without them we cannot do it ... It has to be documented ... Site memos and we have fax, emails ... We have certain decimations that have to be summited to us officially from our documentation control ... We send to them also and they distribute to other disciplines as well."</p> <p>"Documents storage and retriever was trough the DCC (Documents Control Centre) ... They do have backup ... Nowadays they have computerised system totally ... They have software, softcopies and everything, they can retrieve anytime beside the hard copies."</p> <p>"They are updating documents style and trying to make it much more organised."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P3	Senior Project Manager - Leader of Project Managers & Engineers (Civil, Structural & Pavement)	Runways Development of a New Airport - Airfield Projects	01:18:19
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			

"We assigned somebody to attend airport management weekly meetings, and we have asked them to assign a coordinator between us from their side ... Actually our communication was always with him whether by phone, emails, official letter request and all related ... Things were managed directly with airport manager."

Sub-theme: Communication Flow and Instruments (CFI)

"It is top-down way of communication."

"Actually all documents were organized in details, subject heading, letter code or number."

"We have learnt from our previous experience in international airport projects, we had project documents storage system ... People who were working in area have been selected to be members of our project team ... They looked after all those things and they were organized."

Sub-theme: Communication Documents (CD)

"Actually the DCC received several copies ... At the beginning they keep the original copy and send a document to relevant people who then make their note and comments ... The document then to be sent to project director who approve and sign them before sending back the final version to the DCC ... Unofficial internal communication is between the senior managerial level, in a form of email ... If I need to write a letter according to email communication I ask for that and it goes into a process ... We have used new process in this project ... If we receive any document from external party, the DCC scan it and send it to project director who will then distrust it to all department managers with assigning a department manager to make his comment ... Then if any other manager has comments or notes on that he write them and distribute it too by emails ... By using this method we save time and papers too."

"Actually we supposed to bring and implement such software, but when the whole project split into two projects we decided to use our traditional method as we have already started the project many years ago ... Our part of the project is small comparing with landside projects."

"Things that are so important and need to get back to them ... I keep important documents' copies at my office."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P4	General Director of Engineering Affairs - Domestic Airports	Airfield Development Project – Domestic Airport	01:14:21

Intension

Theme F: Communication (C)

Sub-theme: Communication Strategy (CS)

"I had not experienced any issue internally ... I faced some problems with (..) a subcontractor on obtaining the bitumen (asphalt cement) ... I was visiting them many times to secure our bitumen needs."

Sub-theme: Communication Flow and Instruments (CFI)

"Actually, the designer was very close to us even after his contract finished ... He was so cooperative, supportive and even makes some alteration and changes if needed."

Sub-theme: Communication Documents (CD)

"All those documents were under our control in the site office ... We had a department on site called 'document storing', after finishing a project you have to hand all project documents to maintenance department and keep your copy ... If there is any update or upgrade project we can get them."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
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02P5	Senior Engineering Project Manager - Domestic Airports	Development of Seven Runways	01:28:10
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>"In internal and external communication official letter is the adopted method ... I encourage and emphasise on that all agreements and communication-related between different parties involved in a project should be documented including signatures of all relevant parties ... This is to be fair and protect yourself and others."</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
<p>"It was like the leadership structure ... Everything should be through me, as a project manager ... Management is about control otherwise things will go messy."</p> <p>"We had three different types of documents, technical, contractual and financial ... These are the 3 main essential elements in our project ... All that according to project specifications and requirements ... I do follow up the financial documents, but with regards to site works ... Paper works, release, cheques is belonging to the representative from financial department ... Any contractual issue, we have contractual department and they are actually aware of the project as they involve in from the really early stages."</p>			
Sub-theme: Communication Documents (CD)			
<p>"Document store and retrieve process is related to technical support department ... Any project document goes to them ... The project manager get his own copies where I advise that a copy of project documents for them and for project manager as well ... In case of any emergency or needs I can manage it."</p> <p>"Actually we are trying to develop standard ... All these should be standardised; site handover, receive a project, project supervision, reports about contractors, visit reports and monthly reports, consultant reports."</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
02P6	Senior Project Manager – Communication & Control Systems	Totally New Airport Information Communication Technology of the New Airport	01:10:45
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>"We have the internal communication between different departments ... All the concern group are informed about any activities ... All concern parties will be communicated on an official letter not by emails ... Email will be informal as I said our procedure is officially inform by letters."</p> <p>"External communication with (..) the design consultant and the other consultants outside, we always communicate with them ... We have a protocol also for that ... I can write certain things to (..) the head of airport development project department ... But in any letter that is going outside within the contract it should go through (..) the head ... And things to outside (..) the country have to go through (..) president signature, so we have protocol ... We share Information between each other ... With different level of authority."</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
<p>"In my previous experiences we had a proper structure and was from top to bottom ... But here in this project is different and I think it is mix of both flow structures ... This depends on where</p>			

the instruction is coming from and what is required.”			
Sub-theme: Communication Documents (CD)			
<p>“(.) the CM organization here is handling now in a small area, although the paper work is less comparing to what we have, because of the computerization and still we have plenty of them ... So, there is no proper systemic documentation system ... They are the construction manager and they supposed to take care of this which has not been done ... If you look at professional companies, they have a systemic way of receiving the documents.”</p> <p>“All people work in such huge mega projects have well documented and standard structure exist, but here it does not exist.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P7	Senior Project Manager - Deputy Project Director – New Airport Airfield Development Project	Totally New Airport – Planning and Construction	01:10:42
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
“I use emails in internal and external communications except the official one with upper managerial level I use letters communications.”			
Sub-theme: Communication Flow and Instruments (CFI)			
<p>“It is from the top and then distributed accordingly ... And sometimes because of our big involvement, the directors give us an authority if any information come from the outsiders it goes directly ... I look at it and then distributed to the right people ... Likewise a director does the same, either he make an action or leave it to me.”</p> <p>“The DCC (Documents Control Centre) ... They have the entire database ... If any information comes in it goes in electronic format except information come in from the contractor ... Because he has no channel within here ... Any letter within our organization comes to us electronically ... Between us and the contractor comes in a paper works and then all place in as a database ... We put it in our system/storage and then distributed electronically.”</p> <p>“If we want any old document we can collect them from the DCC ... Either by phone or an email.”</p> <p>“We have developed sort of document system and was not successful ... People are not really ready to use that.”</p>			
Sub-theme: Communication Documents (CD)			
“The letter head is the same within (.) the public operator ... They follow just the letter head.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P8	Senior Project Manager – Head of Civil Department	Totally New Airport - Airfield Facilities Upgrade Project	00:52:10
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
“We have verbal, written, emails and munities of meetings ... Internally, it is like we walk over each other offices and communicate with each other and also by telephone if there ... We will have communication through letter, emails, obviously if it involves money then it has to be proper document ... The official way is letter and verbal too, we talk to each other ... Once it is			

concluded then we documented through a letter as it was discussed in verbal communication and meetings.”

Sub-theme: Communication Flow and Instruments (CFI)

“The letter would come to the boss then he would the distribution based upon the content ... If it a technical submittal it will go down to the head of the department then down to the people below him.”

Sub-theme: Communication Documents (CD)

“We have department called DCS (Document Control Centre) ... if I need a specific document and I know the number I go and get it ... If it has to do with other disciplines the right thing to do is to go to the head of the other discipline and then go from there ... They have to keep at least one copy both digital and hard copy for all projects’ documents ... If the size of the project is so big we had our document control and once this whole project is completed, then we would forward all the documents in a letter form to (..) the airport administration ... Not all the letters just the technical documents ... We do still have copies in our archive.”

“The drawing, the numbering system, it was approved by the time where we decided this is the form that we should follow and we follow the same format.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P9	Senior Project Manager – Head of Contract Control Department	Totally New Airport	01:16:52

Intension

Theme F: Communication (C)

Sub-theme: Communication Strategy (CS)

“In Internal communication we utilize official letters and we are trying to rely on electronic communication with external people.”

Sub-theme: Communication Flow and Instruments (CFI)

“All official letters should be signed by departments’ heads ... In construction works you cannot say that this letter is only related to that department ... All activities have impact on all different disciplines ... Accordingly, everyone become aware of the matter.

“We have the document control centre DCC department ... It responsible for all projects documents ... They have all official letters and also some electronic database.”

Sub-theme: Communication Documents (CD)

“Through DCC department ... There is level of privacy in which some documents are open for public, others required department approval and some need director approval.”

“We are trying to standardize our projects’ documents to minimize individuals’ adaptation time ... We are trying to develop our own standard and apply it to all projects ... This is include all document details.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P10	Senior Project Manager – Head of Mechanical Department	Totally New Airport	01:16:52

Intension

Theme F: Communication (C)

Sub-theme: Communication Strategy (CS)

“Internal and external communication are very well and all in writing format unless an external stakeholder has got another procedures or instruments (email) but also will be further in

writing format.”
Sub-theme: Communication Flow and Instruments (CFI)
“An absolute hierarchy structure of communication with a downwards flow. In writing format and all available on request through document control department.”
Sub-theme: Communication Documents (CD)
“The entire process of storage and retrieve through document control centre.”
“Project documents are well organized with standard themes.”

Context			
Organization 3: Private and Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P1	Project CEO	Totally New Airport	01:35:30
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
<p>“With the owner and other government authorities we are dealing with letters and official meetings ... As government bodies are not officially utilising emails and they rely on letters’ communication ... Project internal communication is mainly emails ... The contractor communication method is both letters and emails according to the contract ... Our document control system (ACONEX) is doing the whole job because by utilizing it you transfer all documents and refer to any document you want, it is a complete project library ... The contractor communicates with project consultant through ACONEX and I can monitor documents follow and exchange information ... When my approval needed in any document it appears in my ACONEX file.”</p> <p>“The contractor responsibility and there are people assigned to monitor and deal with it.”</p> <p>“ACONEX is very useful ... A disadvantage is that the main server that has all the data is not in this country ... It is in two different countries ... So, Imagine that the contract with ACONEX Company is finished or any problem happened between the company and any user due to payment delay or any other reasons ... They can close the system and you will not have an access to your data.”</p>			
Sub-theme: Communication Flow and Instruments (CFI)			
“All departments (finance, construction, legal department) can communicate directly ... It is also horizontally within department.”			
Sub-theme: Communication Documents (CD)			
“We do not utilize letter all goes with ACONEX ... All hard copies when dealing with the contractor (official letters) are standardized and based on subject, even communication letters with (..) the owner.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P2	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:37:37
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
“We deal internally by using (email and smartphones) and externally depends who you are dealing with; you use both emails and letter.”			
Sub-theme: Communication Flow and Instruments (CFI)			

“Actually it depends, I mean for instance; when talking about design the information go straightaway to design department from project designer and then go up to us before we approve it and send it to project construction manager. Some other information regarding construction work instruction on site comes from top to down.

This has two traffic ways, first it comes from bottom that receives the correspondent and then goes up and then the top level can just mark and decide who is going to take the action. Top level means to me or project director. We have table/chart of key people on site that usually take site actions when we have any correspondents from project stakeholders. And also this depends on the nature of correspondents whether just for information, need action or just for record. As I told you some communication come from top to bottom and others the other way round, and also some has two traffic lines come from bottom and back to bottom again. Sometime information is related to confidential issues which cannot be circulated to everybody, so it comes directly to top and then we deal with it.

“All specifications of project communication instrument are set ... We use the references system of course ... Documents like contracts, correspondents, minute of meetings, standards and any other agreements; they are usually part of the contract agreement and they are giving priorities and categories ... We are aware of these different documents, their importance and when we have to refer to and so on.”

Sub-theme: Communication Documents (CD)

“We are using ACONEX software which is very flexible ... So many nice features in this programme which also you can filter or ask any queries, it is as the data base system ... You can chose which sort of documents you want (contract, correspondences with the client or us), out-going or on-going documents ... All stakeholders should have an access to the system but of course some people have limitation on some documents access.”

“We are using also local server (dumping tool) where we just dump all and any information that you think people can make use of ... Each department has their own folder on share drive and each folder divided into different folders ... Project director and deputy project director can have easy access to departments’ reports without any request.”

“Document styles are different because ACONEX is the official document control system ... The other one (local) you can change documents any time, delete and put them back ... While the ACONEX keep project records and nobody can change, delete or even edit anything ... All of us (main project stakeholders) use the same documents’ style ... Some manufactures they had to submit some drawings before getting the order to start manufacturing ... They communicated with us through the system where they put all the drawings there ... We can then look at the drawings, print them out, mark them with approve, scan them, put them back and send it back to them ... Our subcontractors have ACONEX access to share all information and drawings (design, construction, catalogue, materials etc.).”

“Another system has more interactions and functions ... We can communicate among each other with regards to obligations ... ACONEX is just a data storage system.”

“In fact, in the contract there is a clear statement that if anything happens we can retrieve our data.”

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>03P3</i>	<i>Senior Project Manager – Leaders of Project Managers of IT Airport Construction Project</i>	<i>Totally New Airport</i>	<i>01:16:11</i>

Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
"We are using ACONEX for project communication, this is for official correspondence in the entire project ... We are giving money to ACONEX programme which is a worldwide document control centre and they keep all the pack ups in their system and not been deleted forever and all your projects stay in there forever which is their warranty."			
Sub-theme: Communication Flow and Instruments (CFI)			
Sub-theme: Communication Documents (CD)			
"Yes we have and I guess they are the same under (..) the CM organization."			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P4	Senior Project Manager - Quality Assurance & Control Manager	Totally New Airport	01:32:38
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
"We use ACONEX in-house but not only (..) the joint venture staff ... Our subcontractors also ... They are using the same system with limited access."			
Sub-theme: Communication Flow and Instruments (CFI)			
"If the information come from outside we have distribution list ... The main group (like project control, project procurement, design, QA/QC, HSSE and other construction groups) their managers' names are written in this list ... Then information will be distributed to whatever who need the information ... It is top-down communication ... And also sometimes ACONEX is used not for distribution information but for assigning responsibilities and tasks."			
Sub-theme: Communication Documents (CD)			
"Styles and format can be different it depends on the document purpose. "			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P5	Senior Project Manager - Project Finance Manager	Totally New Airport	01:11:56
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
"We had a particular system for internal communication just with (..) the CM people ... We were using mainly emails with external communication including few faxes."			
Sub-theme: Communication Flow and Instruments (CFI)			
"It was based on top-down method ... It start from (..) the project manager, down to the construction project manager, from (..) the CM side ... Then to sections or departments' heads."			
"We had what it called the Document Control Centre (DCC) system ... This is one of our best system that we have been implement in (..) the contractor projects ... It is very efficient, very tied, organised and helpful."			
Sub-theme: Communication Documents (CD)			
"We ask the DCC department for that ... We had both electronic and hard copies archive ... Only (..) the CM people have access, and of course they are divided into different access levels or limited access, it not open for everyone."			

Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P6	Senior Quantity Surveyor Manager	Totally New Airport	01:05:57
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
“We are using our company’s email through outlook ... We have another internal document control system (ACONEX) but this mainly just for engineers to share drawings and other communications.”			
Sub-theme: Communication Flow and Instruments (CFI)			
“The flow of the information is similar to the leadership control, top-down.”			
“In the joint venture agreement ... Main issues have been agreed ... It should be a leader and both partners should reach a win-win situation ... They have actually discussed the communication factor and its related issues ... We have mix elements from both companies’ communication theme and style ... It is based on the know-how, who got this his opinion will be applied.”			
Sub-theme: Communication Documents (CD)			
“Storage and retrieval of project documents is from document control department as all are scanned with copies too, and also documents are available through our project local share folder.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P7	Senior Project Manager - Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
“We deal with internal communication in the project by using email and ACONEX ... We are using email communication with our external people ... Even the subcontractor got access to the system.”			
Sub-theme: Communication Flow and Instruments (CFI)			
“The DCC (document Control Centre), they are responsible for all incoming and outgoing documents ... I am dealing with the contract department; their contract documents got their own style.”			
Sub-theme: Communication Documents (CD)			
“When I need any previous documents I immediately ask the DCC (Document Centre) ... They are of course responsible for storage and retrieval of project documents.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P8	Senior Project Manager – Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
“In internal communication we use ACONEX system ... We are sharing ACONEX with (..) the			

owner people also ... We communicate also with all specialised subcontractors by ACONEX ... We use emails with other people communication ... Communication with main stakeholders is mainly by using ACONEX, and emails for other communications.”			
Sub-theme: Communication Flow and Instruments (CFI)			
“The flow of the information here is top to bottom.”			
“The thing is that we have developed our own system here for this project ... The base of those documents is from both joint venture companies ... The one that most suitable and adoptable for us we use it.”			
Sub-theme: Communication Documents (CD)			
“Documents’ storage and retrieval also through ACONEX ... The document control department is also here ... We go to the document control department to get any document if we are not sure about the document name or number ... ACONEX is accessible from your fingertips ... With DCC you need a help from another guy which normally construction people do not like that.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P9	Senior Project Manager – Design Project Manager	Totally New Airport	01:15:37
Intension			
Theme F: Communication (C)			
Sub-theme: Communication Strategy (CS)			
Sub-theme: Communication Flow and Instruments (CFI)			
“The quantity of the information is so high to be controlled by a human brain or tools ... I have direct contact with the project director ... With the operation team, which directly connect with (..) the client ... I have direct connection with subcontractors ... Local authorities all these during the design stage ... I have direct connection with design coordinators who based on (..) abroad and also our experts in every discipline that are like consultant teams ... There are no barriers for anyone of these except external parties who are not related to the project nobody can communicate with them except us ... But for me I can communicate with all of these for the benefit of the project.”			
“Always in the joint venture cases the most experience company will dominate the least experience company in this type of thing ... They have more knowledge and they know how to deal with that ... Most of project technical issues through (..) the CM ... They are assisted by people from (..) the contractor but they do not have any single airport experience ... We (..) the CM are leading this and they are adopting our system in almost everything.”			
Sub-theme: Communication Documents (CD)			
“We fully rely on ACONEX.”			
“The drawings and its set up ... How the drawing will look like, title log and other themes ... We have developed that at the early stage of the project and everyone has to adopt it ... All designers have to adopt numbering system, revision system, checking system and everything else has to be unified through our lead designer.”			

15.2 Theme F: Internal and External Communication - Data Interpretation

15.2.1 Organisation 1 – Private Ownership Structure

O1 has a well-established and organised communication structure. Three methods of communication are available for three different levels. Internal project team members including contractors and suppliers communicate through a document management system called Documentum. An internet based system (BROX) is utilised to share project information with airlines stakeholders. An additional share point system is available to share information between project team members (O1P1, O1P2, O1P3, O1P5, O1P8, O1P9 and O1P10). Documentum is the official method of communication in O1's projects, and this includes project briefs, documents specifications, reports, schedules, minutes of meetings and drawings. Different levels of access permission are associated with Documentum, so sensitive information can be controlled (O1P6 and O1P9). During contractors' tender process, a system called Tender Smart is used as a method of formal communication. SEMAR system allows in-house employees to have conversation with contractors and discuss various issues. Contractors can also send all their monthly applications for payments, submissions and programme submissions (O1P4). Thus, Tender Smart is a kind of pre-contract communication and SEMAR is for post-contract awards. Email can further be used between project members and other parties involved in the project, but for less formal communication. The PMO (Programme Management Office) is responsible for managing all communication-related activities. Additionally, senior project managers must ensure that all communication instruments are managed, logged, controlled and stored (O1P1). All these arrangements were developed recently – eight years ago O1 was relying on suppliers' communication systems (O1P7). O1P8 stated that in their business, they have many lines of communication and enormous volumes of information which need to be shared, in order to manage effectively and efficiently. For this reason, various methods and tools of communication have been established. O1P10 remarked, "the communication here is about people working effectively in different ways, your successful project is all about communication." A newsletter is published every month and circulated to all organisation members; it contains various project information including small profiles about people who manage projects, so everyone becomes aware of the project activities. An operational readiness team has crucial responsibility to communicate verbally with various people within the organisation, in order to enhance business operation.

External communication is through official meetings, emails and face-to-face methods (O1P2, O1P4 and O1P6). O1P10, programme director, states that there is a dedicated team who deals with all government ministries and other departments.

As regards the information flow in O1, it is not necessary to follow the up-down method. O1P1 explained, “we are not a hierarchy on that stage.” There is a clear organisational structure – a director at the top, and then a programme manager, and below him a senior project manager and a project manager – and the flow of information goes both ways (O1P2). However, O1P10 mentioned that most project information flow goes bottom-up.

All senior project managers and parties involved use Documentum in terms of storage and retrieval process. In relation to document structure and style, O1P10, a programme director, recently agreed on standard reports for all business issued through PMO. This was following a meeting with the organisation board, airlines and terminal stakeholders. He stated, “we are changing and developing them now.”

15.2.2 Organisation 2- Public Ownership Structure

Official internal and external communication within O2 is through the use of letters. Internal communication occurs between department heads. However, all external matters, in a country, must go through the head of the airport development project, whereas external affairs should have the organisation’s president’s signature (O2P5, O2P6, O2P7 and O2P9). Department managers use email and verbal methods in informal communications (O2P7 and O2P8). Some correspondence with external bodies can be through email, but this is in a written format. An in-house coordinator in each project is responsible for external communication with various stakeholders (O2P2 and O2P3).

O2P5 stated that information flow within O2 is similar to leadership structure. The flow of the information is based on top-down method (O2P3, O2P3 and O2P8). Within a project team environment, all instructions and information must come from the in-house project manager; he also authorises anything from the project (O2P2). Department heads should have a copy of all official letters to distribute to relevant people (O2P9). O2P10 commented on “an absolute hierarchy structure of communication with a downward flow.” However,

from the project experience of O2P6, information flow was different, and a mix-methods approach was adopted.

All project communications are managed through the DCC (Documents Control Centre), which is an archive department. They have all types of project information in hard copy format (O2P2). O2P3 mentioned, “if we receive any document from an external party, the DCC scans it and sends it to the project director who will then distribute it to all department managers with assigning a department manager to make his comment.” After completing a project, all associated documents must be submitted to the DCC (O2P4). Project managers keep copies of important documents in their offices (O2P3 and O2P3). Accordingly, documents storage and retrieval process is through the DCC (O2P8 and O2P10). Project documents within O2 have no standardised format (O2P5). O2 is trying to develop an effective standard and apply it to all its projects (O2P9). As O2P6 argued, “there is no proper systemic documentation system, all people who work in such huge mega projects have well documented and standard structure, but here it does not exist.” This sort of document control system, according to O2P7, has been developed, but proved to be unsuccessful because people were not ready to use such a method.

15.2.3 Organisation 3 – Joint Public-Private Venture

Internal communication between project joint-venture departments is through emails and smart phones (O3P2). A document control system (ACONEX) is also available for key project stakeholders – the client, CM, contractor and subcontractors – to share officially entire project documents including drawings, minutes of meetings, reports, contracts, approvals, standards and agreements (O3P3, O3P4, O3P6, O3P7 and O3P8). People using ACONEX have different access levels, which are controlled by the project team, in particular, the CM through the DCC (Document Control Centre) (O3P1 and O3P7). A project’s different departments can share project documents and relevant information through a local server (share drive), and each department has its own folder which they can delete, edit or make any alterations to – this is not possible in ACONEX. A project director and deputy project director have easy access to the folders of all departments, so they can review project reports (O3P2). External communication is through emails including a few faxes with some parties (O3P2, O3P5 and O3P7). However, the project team communicates with the

government owner and other government ministries and organisations by official letter correspondence (O3P1). The owner has also access to the ACONEX system (O3P8).

Information flow in O3 mainly follows a top-bottom structure (O3P4, O3P6 and O3P8). Furthermore, much information is from bottom levels to upper managerial levels. Therefore, it depends on the nature of correspondence whether to share information, seek action or just make a record. The top level always decides who is going to take the action (O3P2). Confidential information comes from the top-managerial level and is then distributed to whoever needs the information at project level (O3P4). Numerous information in the joint-venture team are horizontally shared between different departments (O3P1).

The document storage and retrieval process is carried out by the DCC, ACONEX or local share server (O3P6, O3P8 and O3P9). The DCC is responsible for incoming and outgoing documents, so they have a project database (O3P7). According to O3P8, “with DCC you need a help from another guy which normally construction people do not like that.” However, ACONEX and local folders provide easy information access.

Official project document style is standardised and developed by the CM organisation as they have airport know-how. It is developed at the early stages of a project and everyone has to adopt it; this includes communication letters with the project owner (O3P1 and O3P9).

16. Appendix P

Interviews Data Description and Interpretation: Theme G

Appendix – P

16.1 Theme G: Stakeholders Development Strategy - Data Description

Context			
Organization 1: Private Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O1P1</i>	<i>Senior construction project manager – programme manager</i>	<i>Refurbishment of Terminal Departure Lounge</i>	<i>01:28:46</i>
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“We have personal development group ... Part of the central project management organization ... They manage resource as it where and track people skills and training ... We obviously set and form the objectives at the begging of the year and monitor your progress ... Then, obviously, have sort of meeting with your boss and your management structure to improve project performance, work based performance etc. ... There is also talent ... Educational and development of people to look at what development they might need ... Training or moving them into other areas to give them some of broader experience ... Sort of making an assessment of their talents, the potential and performance and then give an overall type rating ... Within each sort of rating there is 3 battery-matrix, high potential people on the top right corner ... Then depending on where you are that will then give sort of guidance on sort of trainings and development activities that people might need specific training courses to try specifically improve particular skills, that might be more pediments in the underperforming people ... It might be more about giving wider experience on moving people across functional rules ... Having assignments in other areas ... Promoting them into different projects ... There are very formal and well developed structured training and development in place.</p> <p>“As an organizational level there is system in place ... Then me within my team I am, obviously, using those systems and then appraising people and determining what I think their needs are ... Then with the project itself level .”</p> <p>“We organize a separate sort of forums for that ... We have done that in the past ... For contract managers ... Who then give an overview on the control ... Through separate stand meetings or team meetings or through some of the other forums ... Monthly and safety leadership forums, or we have monthly quality leadership forums ... Somebody done a project and have a good learning about off-site manufacture so we try to share that with the project team and other projects’ teams via those forums and then they can try and implement it on projects.”</p>			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
<p>“Within me and my team ... I have got a number of project managers on different projects ... I would then look at their development and try to motivate them by trying to broaden their project development opportunities by giving them different projects ... Different rules and assignments ... I am trying to work with them in doing their appraisal to determine what they have fundamentally want to try to improve themselves ... I can make sort of recommendation for trainings and rules ... If I have got a new project manager coming in who need a bit of NCE training, I set up a training course for him or them, perhaps within the project team, to make sure it is very clear what is expected in managing that.”</p>			

Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>01P2</i>	<i>Senior Construction Project Manager - Portfolio Manager of Asset Replacement & Commercial Capital</i>	<i>Minor Construction Works Programme: Office Buildings, Roads Networks – Escalators</i>	<i>00:52:45</i>
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“In terms of the project managers ... We all have individual development plans ... There are selections of development packages you take on ... Specific courses, specific qualifications etc. ... Most of us have been through APMP and some of us have done managing successful programmes ... Comparing business cases etc. ... There are broader schemes which are leadership development etc. ... I would say there is a quite good of formal trainings ... It is your choice ... You agree with your manager which one you going.”</p> <p>“In terms of other development is through undertaking different roles ... I changed them around to give them the exposure they need to particular topic, people management, business areas etc. ... Actually we do not train the suppliers ... We will put them through certain specific initiatives that we want them to go through.”</p>			
Sub-theme: Training Method (T'M)			
Sub-theme: Motivation Method (MM)			
<p>“I motivate my team through recognition when they accomplish their job, we motivate them through future opportunities and development ... Most powerful thing is recognizing what they done well.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>01P3</i>	<i>Senior Project Manager in Direct Support of Strategic Initiative – Pre-construction Activities</i>	<i>Strategic Construction Projects Perspective</i>	<i>01:25:56</i>
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“We have such a massive project management organization here ... Anything that around new processes or new regulations tend to be across the board ... Last couple of years, we changed our project processes and our approach to project and programme and the whole organization went through a process where everybody did practices sort of APM courses ... We have recently upgraded our project control system ... Everybody is going through training process involved with what they need to know for that specific rule in life in relation to that system.”</p> <p>“With the stakeholders ... They get what the project about without educate them and what we mean by the initiate stage ... I think one of the traps that we sort of often we fall in to in sort of development world is that wherever we comfortable looking at technical drawings and project schedule ... If you show stakeholders a project schedule they will not have a clue of what they are looking at ... The challenge is more about explaining the schedule issues and some of the milestones and how the works been broken down and build up in a way that is visually acceptable to them ... Talking about it without using lots of technical project management speak ... I am trying to find a way to explain it in a way they understand it without them feeling that</p>			

they being overwound by a process they do not understand.”			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
“Definitely team members have an input ... I do not think anybody should be working on something that they are not contributing to ... If they are not contributing then they are not needed .. Everyone must have contribution, for sure within different levels If they are needed then obsoletely they are making a contribution.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P4	Senior project Manager - The capacity Optimisation Programmes, Airfield Team	Airside Physical Facilities – Dealing with Snow in Winter Condition	01:19:40
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
“On my project team work for different companies other than Heathrow ... I certainly tell them good job if they have done a good job and give them that bit of feedback ... I would only give full feedback if I ask for it ... 3 strengths, 3 development areas or something like that ... Would not give development areas unless somebody ask for it or was a performance issue and I felt that it was needed to be addressed.”			
Sub-theme: Training Method (TM)			
“The team do their company trainings, (..) the contractor provides training for them ... They get better at doing their job ... They have recently done a lot of trainings to take that on board ... I am on the course this year, I am on a leadership and development course this year ... Being a leader and managing people and getting the best out of people ... I set down with the project team ... What did you do this weekend ... I say I have got some that I want to show you ... Then we talk about it.”			
“Those trainings have developed by (..) the private operator ... It is a structure courses, there is 9 or 10 of us from around the business, operation, IT, finance and we are all doing couple of days every month			
“I have been to (..) army school for a year ... So, I know what it is to be a leader, but there is a lot of stuff in this course that is new to me and I am taking huge amount from it ... there is a lot of stuff that I want to share with the project team.”			
Sub-theme: Motivation Method (MM)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P5	Senior Project Manager – Fast Development Projects	Separate Temporary Terminal	01:13:47
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
“We just mentioned the safety induction and on the training that (..) the CM gave contractors when they came on site ... Then the people who going to operate the building ... A period at the end so after we finished the construction ... To familiarise the stuff, and we focus on familiarisation rather than training because we tried to make sure all of the process on the			

building were the same as you use in the rest of the airport ... We had a number of familiarisation sessions very early on for the stuff to identify the work ... Then we held a series of trials with passengers, so we used a lot of people from the offices and from our resource based at (...) the airport to go out there and act as passengers with bags, with boarding cards, some of them we have given them rules to play on the day ... They made it realistic as possible."

Sub-theme: Training Method (TM)

Sub-theme: Motivation Method (MM)

"In this temporary project, everybody get behind it, when they went over there for the first time it was a 'wow' because it was very different from what we normally do ... they are delivering something for (...) the sport event."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P6	Senior Construction project manager	Refurbish an Old Domestic Lounge	01:05:16

Intension

Theme G: Stakeholder Development Strategy (SDS)

Sub-theme: Development Level (DL)

"We encourage people to have personal development plan, to whatever objective that we have to deliver ... That will identify what people need to do ... There is training courses for people that they can attend ... Business training courses ... Presentation skills, personal impact, influencing and negotiation ... What we encourage people to do is do identify the courses that I need to attend on the softer side ... From a technical side we are taking everyone through APM, project potential which runs by an external company based on identify people potentials and again identify any training they may need to develop them ... Our goal at (...) the airport is to make sure that our people are up to the right competency level where we try to align with the APM (Association of Project Management) to use their competencies ... 13 competences we ask our people to have and then we develop them ... Some of them will be strong in some areas not strong in other areas ... There is quite a structure approach where we develop our people ... We got a number of training courses, and we got a process that all follow."

"If it a key stakeholder we identify what is need for them ... There are two strains of it, there is people so developing our people ... Stakeholders are around identifying what their power influence basically, not as an individual but as an organization and how we need to manage them ... The development scheme is only for our people."

Sub-theme: Training Method (TM)

Sub-theme: Motivation Method (MM)

"From your leadership skills, we got around leadership programmes ... We know that the only way you going to motivate people by a good leadership skills ... A good leader is able to sort of harness the different strengths of the team to get to pull in one direction ... We got an on-going development programme for our people around leadership ... Leadership is around how to keep team motivated ... Encouraging everyone has a role to play, that is our philosophy you are not going to deliver project without engaging people."

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P7	Senior Project Manager – Capital Construction projects	Airside Segregation Project	01:05:57

Intension

Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“within that project, there was a very immediate recognition ... In terms of the status, rewards or whatever ... In terms of knowledge we do not really advocate anything outside the project for the companies’ themselves, only there was some complaints’ requirements that people had to go through certain training.”</p> <p>“Maybe that was because the short duration of the project (2 years) ... I think if you have a 10 years-time scale you have also got to have succession planning, because people usually get bored after 3 or 5 years.”</p>			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
<p>“It was really getting the buy in, people buy in to something we are all aiming towards ... We are all as a team and we are all enthusiastic ... It was almost a goal for all of us.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P8	Senior Construction Project manager – Leader of project Managers & Project Engineers within Airport Runways Projects	Airfield Pavement Projects (Runway and Taxiway Refurbishments and Prefiguration)	01:16:36
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“We are trying to get the stakeholders to better their knowledge ... By taking them out in the site and showing them what we are doing and that goes right back to chief operator ... He is knowable but has not seen this bit of work ... To drive him and get his knowledge up we took him out to the site so that he can see, instead of just seeing presentation from me ... That increased massively his knowledge about what we are doing and the difficulties and complexities ... When we go and talk to him he got better understanding ... We have lots of training courses for people and we do find there is a particular lack of knowledge ... Not so much technical training ... More about management and other stuff about our business benefit.”</p> <p>“Everyone has the APM training for project managers ... Just for our working development, so it is just ours ... Most of stakeholders’ development area is to get them out to see what we are doing, how we are doing it and what the challenges are ... Some of it is around trying to explain to the contractor that what we have got ... Why I can only construct this, why I need this bit of information, to give it to them, to instruct them to do their bit of work ... It works both ways, so I can learn a lot from particularly the airside operation, what do they concern about, what do their drivers, what do they need to know, why do they do, what they do and how they understand what we do.”</p>			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
<p>“Yes, I think they have input ... I am trying to sort of give them some encouragement and rewards ‘well done or whatever’ ‘that is very good’, that sort of prize and sort of stuff ... They do understand they have got and input ... For some of the guys working in the ground within the details I am trying to explain to them the big picture ... Why we are not doing that.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length

01P9	Senior Construction Project Manager – (leader of Project Managers (Security and Saving Operational Cost)	Terminals Security Project: Security Equipment in the Passenger Security Areas	01:43:20
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“Generally the training does not take place during projects implementation or any period in the project ... My APMP training, my MSP training and anything else that I have been on in terms of sort of business case training, influencing people and all that sort of project management type training courses, they managed separately from the project environment ... Then bring to the project in terms of knowledge ... The only on-site training is about induction type training ... On health and safety courses ... What I have to wear when I go in a construction site ... For suppliers and contractors we do not send them on training courses other than the induction type training, whether safety or our main project management building induction ... Their own management organize training for them around better delivery practices in general but not specific to the project they are currently working on.”</p>			
Sub-theme: Training Method (TM)			
“Both methods of training.”			
Sub-theme: Motivation Method (MM)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
01P10	Senior Construction Project Manager – Programme Director of Terminals Projects	Totally New Terminal	02:24:06
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“Capturing knowledge is what we have to do now with regulations ... We have a learning review and it is formal and it captures all ... What I do is as part of my APM (Association of Project Management) stuff is I have this thing called launch and learn ... for (..) previous terminal we have got lots of learning from the project ... I have captured all that learning and just put it straight through into (..) this project ... In presenting this a lot of people attended and debate about it ... It has written down and has given to the airlines as well to show that we are learning ... It is not great to say we fault on this ... All in there and it is visible ... People do not read learning documents ... A DVD, so we have got videos of me and videos of others talking through what other top-five things that were good and what were bad ... We have been rubbish on the past on it ... Now we have got process in place, but we only started during the last two years doing it probably.”</p> <p>“We are going through a massive amount of trainings ... Each person is going through 2 days of training on behaviours of Q6 ... We are doing this at senior level at the start to see how it works before we roll it out ... It is about training people to check that they know NEC3 contract ... Everybody has got to have APM (Association of Project Management) trained ... Commercial awareness ... Q6 awareness ... So, everybody has got training needs analysis ... At the end of the day, if anybody is not got their training will get their bonus reduced ... These what we were working on recently ... all of our new construction companies who will be announced this week have been assessed on these ... In terms of the acquisition of them, they have been on behaviour scenarios ... They have been giving a scenario and they have been measured by independent</p>			

people about how their behaviours are, in a case study ... If they fail in this they don't get in ... This is about how they can demonstrate those behaviours."

"The thing that in your mind and what you are writing about, we are not there yet ... I have just been in a session which is, are we at risk for some of these stuff ... It is a bit touchy feeling for the construction industry to start talking about behaviours ... Contractors don't get these stuff, but they been contracted on that ... How you can contract on behaviours ... But there are mechanisms we have got on place to the CEO we go along ... We are going to give them the availability to how we are doing ... How me performing, how is my behaviours like ... How we can change (...) the country contractors, they are all about money ... It is quite interesting ... We will make it work, I am going to be positive as a director on this."

"Whether we do anything else people can put it in their training needs ... I am helping a guy in public speaking ... You can choose whatever you want but it has to be ok with your line manager."

Sub-theme: Training Method (TM)

Sub-theme: Motivation Method (MM)

"Recognition is through bonus ... So, we have got bonus ... We have a curve, top 60s ... I may rank somebody in the bottom ... Somebody in the top, few in the middle and some below average ... and some above average ... I may have everybody performing the same brilliantly and few persons in the bottom ... so, they got no bonus ... they got 40% of their salary as a bonus ... how we measure it, so you have your objectives and you have to hit all of those ... you got the what and the how, what you achieve and how you achieve it ... It is based on individuals performance but I make people performance up of the project, so they may hit personal targets but it is the project target ... so maybe 15 of them working on one job, so it is about the performance of that job."

Context			
Organization 2: Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P1	Deputy Construction Project Director/Project Control Manager	Totally New Airport	01:35:30
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P2	Head of structural engineering department	Private Aviation Terminal Project	01:21:25
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			

"I cannot see other people coming and telling us to do this really ... This has been practicing in the past several years because of this kind of development, do have all skills, do have develop ourselves to insure that things are done ... I think it should be part in doing standards, practicing, project management practicing and a lot of tools we do have and we know that this is the methodology ... Unless there is a huge project where this kind of development be required from outsiders."

"Important thing regarding development strategy with stakeholders ... Sometimes our engineers are giving some courses that has to be attended by them ... Within (..) this country or outside, they go and then learn from them methodologies and procedures or how we handle all stakeholders and other disciplines, communications, development and all this sort of things."

Sub-theme: Training Method (TM)

"We do have on-job training as well as for our engineers who are new to us ... And sometimes there are kind of extensive trainings that they go for a week time within (..) this country and outside as well."

"Within our managerial level of course they do have it also and sometimes we bring the people to come in and give us lectures, seminars like a full day or two days sessions."

Sub-theme: Motivation Method (MM)

Context

Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P3	Senior Project Manager - Leader of Project Managers & Engineers (Civil, Structural & Pavement)	Runways Development of a New Airport - Airfield Projects	01:18:19

Intension

Theme G: Stakeholder Development Strategy (SDS)

Sub-theme: Development Level (DL)

"This is actually one of the importance elements ... Develop the maintenance people in terms of dealing with new equipment and spare parts, was one of our tasks in the project ... We developed a schedule for stakeholders who going to operate the project later on ... Including to that fire safety people as one of the project requirement that we build 6 fire stations equipped with advanced facilities and gears ... They have sent abroad to be trained and looked at new machines and tools ... Air Traffic control personnel have also been trained for 3 weeks in-house and outside as well ... As we have purchased new and advanced air traffic control system including its equipment."

"In managing this we send full details and explanations to targeted department asking its manager to nominate individuals who need the particular type of training ... So they can function effectively ... They appointed who need those trainings based on their needs."

"Actually most trainings were targeting young local engineers ... We have trained them in various things ... With regards to our level, we have several expeditions ... We can acquire new knowledge and become aware of the new airport technologies through those events."

Sub-theme: Training Method (TM)

"As mentioned, in-house and outside as well."

Sub-theme: Motivation Method (MM)

Context

Participant	Position Title	Best Project Experience	Interview
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Name		Chosen	Length
O2P4	General Director of Engineering Affairs - Domestic Airports	Airfield Development Project – Domestic Airport	01:14:21
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“We tried to organise different trainings to project team to expand their knowledge ... Some of them had trainings that arranged by training department ... I had different trainings and other managers also ... When I first started my job with (..) the public operator I had a three months training programme, abroad, with an airport consultant ... They trained me different things related to the airport business ... I went also to another country for 2 months and a half for training as well, in terms of how to design an airport, how to operate an airport and how to maintain an airport.”</p> <p>“We had people from technical college who got some training on site ... I ask the contractor to involve them with his workers in different disciplines.”</p>			
Sub-theme: Training Method (TM)			
“Both methods.”			
Sub-theme: Motivation Method (MM)			
“This is by complements ‘well done’, ‘good work’, etc. ... I use a verbal method for that ... We have not got any other way to do that.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P5	Senior Engineering Project Manager - Domestic Airports	Development of Seven Runways	01:28:10
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“This is based on an individual himself ... To be or not to be ... If you want to develop yourself, you will end up with a remarkable development ... If you are not interested in development you will stay the same, at the same level maybe.”</p> <p>“Yes it is for all ... Again it depends on the person where you have to dig here and there to get what you aim for ... I will be always with you if you want ... If I see any ambitious individual I try to give him training and even send him abroad for short courses ... Individuals training programme is one of (..) the public operator interests.”</p>			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P6	Senior Project Manager – Communication & Control Systems	Totally New Airport Information Communication Technology of the New Airport	01:10:45
Intension			
Theme G: Stakeholder Development Strategy (SDS)			

Sub-theme: Development Level (DL)			
<p>“All our stakeholders get good training ... We gave them training on advanced equipment or tools ... We gave stakeholders training on any different or new policy ... Any training is a continuance process and we gave them also the maintenance manuals plus workshops on how to conduct ...</p> <p>“In some cases the training is there ... In our case we have training in the use of most equipment ... for project team, recommended trainings which in certain cases sometimes it happens ... Not everybody get training ... Training generally speaking, people did receive training, people go to expedition and go outside the country for training in so many places.”</p>			
Sub-theme: Training Method (TM)			
<p>“Anything to do with the contractor is on the site ... We brought also foreign people ... We bring the original manufacture and present to us, they will train the team ... Equipment people ... Operators which are air traffic control ... We have both on-the job and off-the job.”</p>			
Sub-theme: Motivation Method (MM)			
<p>“Actually with the (..) the young local engineers, all the time I try to help them, motivate them to stay on the job and tell them this is the best opportunity ... You must engage yourself in this good opportunity and interact with professionals.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P7	Senior Project Manager - Deputy Project Director - New Airport Airfield Development Project	Totally New Airport – Planning and Construction	01:10:42
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“This is a very good question ... Initially we start hiring people because we have a long term project and we have those people from different places we place them within (..) the public operator ... They are not necessary to be local ... From outside also ... You get more people then and when it goes down to almost hand over people start to leave ... We seek for people who have experience on the particular area that we looking for.”</p> <p>“Actually we send them for training, conferences, seminars, in-house training and so on ... Especially if they requested that ... If I feel x number of people really need training I send them and I encourage them to go ... (..) the public operator send letters to each department ‘we have these seminar or conferences, if anybody would like to be nominated just send us their names’.”</p>			
Sub-theme: Training Method (TM)			
<p>“In-house training and outside too.”</p>			
Sub-theme: Motivation Method (MM)			
<p>“We encourage and push them to work hard; we push them to participate in related projects ... We take them to our big meetings ... We do not really motivate external parties ... We do not have authority to retreat them ... But actually I felt from experience that when I see a contractor and we invite and advise him to share with us certain conferences and seminars, because that give a very good skills to acquire knowledge and be at the same level as we are.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P8	Senior Project Manager – Head of Civil Department	Totally New Airport - Airfield Facilities Upgrade Project	00:52:10
Intension			

Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“We had like that young engineers are assign to senior guys and they work under them and then ... They take them along, show them and of course we are looking for more self-initiative.”</p> <p>“One of the item that included in the contract that the transfer of knowledge to local ... The more initiative come from his side the more excitement from a senior guy ... Once the project is completed the contractor is required to train the operators and then they provide trainings for them ... But whatever is needed they provided.”</p>			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
<p>“Motivation is looking to the sky ... Motivation is that you want to work hard ... Because you want to go up there ... Working in foreign countries, my motivation is if I perform well I have a job and maybe they would give me an increase.”</p> <p>“Over my experience here, appreciation from bosses ... But defiantly awards and financial recognitions would be good as well, I mean you have to appreciate man or women performance, if a person performing well it is a human nature.”</p>			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P9	Senior Project Manager – Head of Contract Control Department	Totally New Airport	01:16:52
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“We had implemented long time ago in another project a programme called SEDP, it is a development programme for young local engineers ... We were selecting a number of local engineers in different fields whether engineering, contract, legal or finance ... According to our agreement with different international universities, they have sent to study Master degree and continue their learning cycle through working at (..) an international project management and construction company, particularly for 2 years in its various construction projects ... This method was really helpful and supportive as we have realized its tangible benefits ... Most of our senior managers and airports’ executives have involved in this development programme.”</p> <p>“Currently our main assigned responsibility is to develop project plan, make evaluation process and assessment procedure until contractor award stage ... We do follow up the awarding and mobilization stage ... Following that, there is another team that will be developed in order to supervise and lead the project ... Indeed we have developed another training programme and made various agreement with high level international universities ... However, (..) the public operator president has postponed this programme for some reasons.”</p>			
Sub-theme: Training Method (TM)			
“Both.”			
Sub-theme: Motivation Method (MM)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O2P10	Senior Project Manager – Head of Mechanical Department	Totally New Airport	01:16:52

Intension
Theme G: Stakeholder Development Strategy (SDS)
Sub-theme: Development Level (DL)
“Development level is not applicable to senior managers or even above levels.”
“I have not experienced any development or training activities for project stakeholders Mainly all initiatives are related to young (..) local engineers.”
Sub-theme: Training Method (TM)
“I assume they have both methods on-the-job and off too.”
Sub-theme: Motivation Method (MM)
“We have not got clear method for motivation ... if so, it is always personal initiatives and based on individual's leadership skills.”
“There was team recognition by the very top managerial level but in form of complement and assigning more responsibilities ... However, I have not experienced this in my previous projects.”

Context			
Organization 3: Private and Public Airport Operator			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P1</i>	<i>Project CEO</i>	<i>Totally New Airport</i>	<i>01:35:30</i>
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
“The training for construction team is not our obligations ... Within the operation team we have training programme for junior staff and sometime they are attending several workshops to develop particular skills ... We have off-job training and also on-site training ... We are utilizing (..) the CM experiences by sending different employees to site office in order to attend some workshops or we bring some instructors in our head office to present some training.”			
“Actually I attended some personal training programme ... Yes we provide training for some external stakeholders in order to explain how airport system, equipment and facilities must be operated.”			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
“By providing good relation and also checking employees' personal needs ... Involve them in social events (dinner, parties, special celebrations) ... Including reward for appreciation whether by using emails, letters or certificates and announce it to all company members ... In some events we mention people achievements and good practices in front of all staff ... Some gifts also in personal celebration (wedding etc.) ... All these elements make all employees more motivated, loyal and commitment to their job ... Also in county's official events, we send invitation to all stakeholders involve in our project (internal and external) in order to break the ice and create healthy environment ... My door is open to all employees and I try my best not to make any obstacle between us ... I do not like the manger-employee relation.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P2</i>	<i>Deputy Construction Project Director/Project</i>	<i>Totally New Airport</i>	<i>01:37:37</i>

	<i>Control Manager</i>		
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“The company picked up some guys from each department to be sent to the main office in Riyadh for Oracle training ... When we started we were looking for expert guys with good skills and wide experience, we did not want to waste our time in trainings ... We interviewed nominated people at the beginning of the project and we then picked the good ones ... If you find anything missing in one person you can guide him how to do it ... Official training scheme, I do not think it is a policy in this project ... Within (..) the contractor company, nothing involve with this project but they have their future strategy so they ask directors of all different projects to provide evaluation reports of their staff ... They pick people from different projects and their departments to send them for training ... Not necessary what they learn will use it in the project, but they will keep it for future ... Workshops are always running in different areas ... Those workshops are excluding the compulsory training where everyone should be subjected to training, testing and certification.”</p>			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P3</i>	<i>Senior Project Manager – Leaders of Project Managers of IT Airport Construction Project</i>	<i>Totally New Airport</i>	<i>01:16:11</i>
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“Yes we (..) the CM company have a lot, but in the head quarter they have special department who gives training people and also education centre that gives a lot of airport business trainings, different languages and so many kinds ... But actually we are (construction team) not getting this benefit from our companies because we are always working outside.”</p>			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
<i>O3P4</i>	<i>Senior Project Manager - Quality Assurance & Control Manager</i>	<i>Totally New Airport</i>	<i>01:32:38</i>
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
<p>“About subcontractors’ trainings, mostly they are for their managerial level (managers) ... We call subcontractors’ mangers for training and sometimes they bring, “Yes, sometimes we have ... Most of our jobs are ‘practise’ on site, in any practice we have to give training or teach people and sometimes to formal people not only engineers or project managers.”</p>			

Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
“It is in general life ... I like to listen first ... I listen to any kind of people but also I want them to listen and understand me ... Communication is very important between all kinds of people.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P5	Senior Project Manager - Project Finance Manager	Totally New Airport	01:11:56
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
“They do receive trainings, as training sessions and other materials are mainly based on different language, some of them English languages ... Other trainings for people are depending on their needs ... And the subjected trainings scheme for all managerial levels.”			
In general no, unless there is a must under the subcontract where (..) the CM provide certain experience, knowledge or information for external parties.”			
Sub-theme: Training Method (TM)			
“Actually both.”			
Sub-theme: Motivation Method (MM)			
“Incentive was the main motivation factor ... At the end of each three months there was a performance report of each team member and it was confidential ... Whoever got less than a certain level he will get off the project.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P6	Senior Quantity Surveyor Manager	Totally New Airport	01:05:57
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
“In some cases if I have any good training I nominate them ... Next week we have seminar for tax and zakah.”			
“Within (..) the contractor company, not in this project, we had so many internal (in-house) trainings and seminars ... We have here safety sessions for each person who going to work in this project.”			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
“We have the best employee of the month for staff working on construction site ... It is money recognition.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P7	Senior Project Manager - Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme G: Stakeholder Development Strategy (SDS)			

Sub-theme: Development Level (DL)			
“Actually there is not any development programme or training here in this project ... But in our head office there are too many training programmes (..) the CM has.”			
Sub-theme: Training Method (TM)			
“Most of trainings are in office.”			
Sub-theme: Motivation Method (MM)			
“I let them to do whatever they like ... I give them freedom and free space.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P8	Senior Project Manager – Health, Safety and Security Manager	Totally New Airport	00:54:22
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
“Yes it was a rescue training specially organised for safety people of this project, heavy equipment training and people treatment training ... It depends on the people, who involve in this practices get these trainings.”			
“For external we are just giving a specific training like people who are working at site, people who are not trained we call and train them.”			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
“Actually this is by appreciation (certificates, awards), financial ways and promotions ... For subcontractors it is just financially and appreciation too.”			
Context			
Participant Name	Position Title	Best Project Experience Chosen	Interview Length
O3P9	Senior Project Manager – Design Project Manager	Totally New Airport	01:15:37
Intension			
Theme G: Stakeholder Development Strategy (SDS)			
Sub-theme: Development Level (DL)			
“Actually they have employed me because I have experience and Master in engineering management and I am aware how to use strengths and weaknesses for the benefit of the job ... There is no time for training ... If you mean that we send them for training courses, this is not in a fast track construction business project ... We cannot employ someone who needs such trainings ... Few engineers have weaknesses in some areas and do not know that, so you have to explain to them to show them how this will be done and ask them to make research by themselves on particular subjects.”			
“When dealing with other stakeholders, they might do not have this and cannot even imagine spaces, sizes and other things ... It was a difficult issue because when you show them a drawing, they will say what is this, are you going to put me in here ... But actually we are trying as much as we can to explain and try to observe their comments and make them happy.”			
Sub-theme: Training Method (TM)			
Sub-theme: Motivation Method (MM)			
“When they do something good you show them appreciation ... This is very important and I always focus on their strengths not weaknesses ... The design team are highly educated people, so a good word is an award for them.”			

16.2 Theme G: Stakeholders Development Strategy - Data Interpretation

16.2.1 Organisation 1 – Private Ownership Structure

In O1, there is a formal and well developed training structure in place. The personal development group, which is part of the project management organisation, manages all development programmes (O1P1). All levels within O1 receive training and are enrolled on development programmes, including directors, project managers and all other individuals. In terms of individuals, project managers move between different business areas to acquire broader experience (O1P2). A talents assessment plan is provided for people, in order to offer a sort of guidance on types of training and development activities that people might need, which is run by an external company. A personal development plan and technical development are available for people. The former relates to presentation skills, personal impact, influencing and negotiation skills and other personal competences, while the latter is achievable through APM (Association of Project Management), that is, various training courses that develop 13 different competences. O1P2 observed, “there is a quite good formal training, it is your choice, and you agree with your manager which one you are going to do.” Everyone in the organisation has to have APM training, as the airport goal is to ensure that its people have the right competency level (O1P6, O1P8 and O1P10). All this training is managed separately from the project environment; the only on-site training is induction type training (O1P13). For project managers, in addition to APM related training, there are various development sessions and forums on good management and leadership practices (O1P1, O1P4 and O1P10). Training and development schemes are provided just for in-house people. However, another aspect of stakeholder development is to familiarise them with a project site, status, operational elements and associated challenges and difficulties (O1P5 and O1P8). They are also involved in different induction sessions whether related to project briefing or health and safety matters (O1P9).

O1P10 stated that capturing knowledge is what O1 has to focus on with its new regulations and Q6 plan. Accordingly, launch and learn, which is part of the APM programme, is now implemented. It is about learning from previous projects and putting this knowledge into practice in the new development projects. O1P10 remarked, “in presenting this a lot of people attended and debated it, it was written down and given to the airlines as well to show them that we are learning. It is not great to say we are at fault on this but it is all in there and

it is visible.” In this regard, DVDs are provided with directors and project managers talking about the top-five positive elements and what was bad in previous projects. All people must have training on behaviour for the new Q6 plan, which includes people’s awareness of the NEC3 contract. Those who do not complete all the compulsory behaviour training, their bonus will be reduced. Contractors also involved in behaviour scenarios, which are evaluated by an independent party, and if they fail, they are not awarded a contract.

The following Table 15.1 illustrates how project managers deal with motivating people.

Table 15.1: Organisation 1 Motivation Methods

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O1P1</i>	- Broaden their project development opportunities by giving them different projects and different rules and assignments. - I set up a training course for him or them.
<i>O1P2</i>	- Through recognition when they accomplish their job. - Through future opportunities and development. - Most powerful thing is recognizing what they done well.
<i>O1P5</i>	- It was very different from what we normally do, they are delivering something for (..) the sport event.
<i>O1P6</i>	- By a good leadership skills, a good leader is able to sort of harness the different strengths of the team to get to pull in one direction. - We got an on-going development programme for our people around leadership.
<i>O1P7</i>	- It was really getting the buy in. We are all as a team and we are all enthusiastic, it was almost a goal for all of us.
<i>O1P8</i>	- ‘Well done or whatever’ ‘that is very good’, that sort of prize and sort of stuff.
<i>O1P10</i>	- Recognition is through bonus, they got 40% of their salary as a bonus. it is about the performance of that job.

16.2.2 Organisation 2 – Public Ownership Structure

Individual training programme is one of the responsibilities of the public operator (O2P5). The majority of development opportunities in O2 are reserved for graduates, young local engineers, working in various departments (O2P2, O2P4, O2P9 and O2P10). There is no established or organised development method. Instead, it is based on self-initiative and individual awareness of personal development needs, which depends on a department’s head agreeing to requested training or a development programme (O2P5, O2P7 and O2P8). For O2P5, “this is based on the individual himself. If you want to develop yourself, you will end up with a remarkable development, and if you are not interested you will stay at the same level.”

Airport operation stakeholders have received different training sessions, at home and abroad, on how to deal with operational aspects in terms of new equipment and advanced technologies in new projects (O2P3 and O2P6). Department heads nominate individuals who need particular types of training (O2P3).

O2P10 stated, “development level is not applicable to senior managers or even above levels”. However, training opportunities for upper-managerial levels are in the form of in-house lectures or seminars delivered by external people on particular knowledge or technologies (O2P2). They also attend different expeditions for the airport industry, which is business related, whether in their country or abroad (O2P3 and O2P6).

The following Table 15.2 illustrates how project managers deal with motivating people.

Table 15.2: Organisation 2 Motivation Methods

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O2P4</i>	-I use a verbal method for that, we have not got any other way to do that. This is by complements ‘well done’, ‘good work’, etc.
<i>O2P6</i>	- With the young local engineers, all the time I try to help them, motivate them to stay on the job and tell them this is the best opportunity.
<i>O2P7</i>	- We encourage and push them to work hard, we push them to participate in related projects and take them to our big meetings.
<i>O2P8</i>	- Motivation is that you want to work hard ... Because you want to go up there, working in foreign countries, my motivation is if I perform well I have a job and maybe they would give me an increase. - Appreciation from bosses.
<i>O2P10</i>	- We have not got clear method for motivation. - Complement and assigning more responsibilities.

16.2.3 Organisation 3- Joint Public-Private Venture

Each company in the joint-venture cooperation has its own training and development programmes for all managerial levels, but this is not included within the project agreement policy (O3P2, O3P3, O3P5 and O3P7). Most individuals in the project team have acquired skills and competences which are part of their selection criteria (O3P2 and O3P9). O3P3 explained that the CM airport construction team does not receive this training as they are always working abroad. In relation to this, O3P9 mentioned, “this is not in a fast track construction business project, we cannot employ someone who needs such trainings.”

However, in some cases training and seminar activities are organised when needed (O3P6 and O3P8). The only established training or workshop sessions are those related to health and safety and project induction.

The operation team transfers CM airport knowledge to their personnel by sending certain individuals to construction sites in order to attend specific workshops. There are also organised training and workshops for airport operations people on advanced airport system, new equipment and facilities, in terms of how they function (O3P1).

The following Table 15.3 shows how project managers deal with motivating people.

Table 15.3: Organisation 3 Motivation Methods

Sub-theme: Project Team Efficiency	
Participant	Response
<i>O3P1</i>	<ul style="list-style-type: none"> - Good relation and also checking employees' personal needs. - Involve them in social events. - Appreciation whether by using emails, letters or certificates and announce it to all company members. - Some gifts also in personal celebration (wedding).
<i>O3P4</i>	- I listen to any kind of people but also I want them to listen and understand me.
<i>O3P5</i>	- Incentive was the main motivation factor. At the end of each three months there was a performance report of each team member and it was confidential, whoever got less than a certain level will get off the project.
<i>O3P6</i>	- We have the best employee of the month for staff working on construction site ... It is money recognition
<i>O3P7</i>	- I give them freedom and free space
<i>O3P8</i>	- Appreciation (certificates, awards), financial ways and promotions.
<i>O3P9</i>	- When they do something good you show them appreciation, This is very important and I always focus on their strengths not weaknesses. The design team are highly educated people, so a good word is an award for them.

17. **Appendix Q**

Managing and Controlling Airport Construction Projects: A Strategic Management Framework for Operators

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Appendix – Q

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Managing and Controlling Airport Construction Projects: A Strategic Management Framework for Operators

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Abstract—Challenges and difficulties of managing construction project increases when the context is related to an airport environment. Consequently, there is a need for holding bodies of airports to change their procedures and practices in order to accommodate the unique and complex construction environment. Within an airport environment, different strategies play a significant role in achieving organizational success through an effective and efficient delivery of various construction projects. Those strategies are influenced by project management strategies and human-related competencies. This is, in turn, requires strategic competence and ability at both functional and operational levels. Several researchers have shown a growing interest in operating strategies and human-related studies within the construction industry; however, an integrated study of these two factors has been lacking, particularly in an airport context. This paper reports the initial work of a research project which seeks to integrate the theories associated with project and human resource strategies within the construction industry. Its aim is to develop a theoretical framework for airport operators to implement in order to cope with an airport environment and enhance business operations when managing and controlling construction projects.

Index Terms—construction industry, airport construction, project management strategy, human resource strategic management.

I. INTRODUCTION

The construction industry is one of the major industries in terms of both size and impact [1]. It is considered not as a single industry but one where several market sectors integrate to form the industry. Indeed, there is no obvious agreement on the classification of construction sectors or on how the industry can be broken down into different categories [1], [2]. Construction plays a significant role in the overall economy of both developed and developing countries in terms of economic growth. Its various activities and related projects also have a great impact on different key factors of a country's overall development aspects [3]. Therefore, it is essential for construction activities to be accomplished successfully in an effective and efficient way. This requires various strategic and management capabilities.

Among the different types of construction sectors and their numerous types of construction works, airport projects, in particular, are very complex and have unique characteristics. In an airport, a number of significant and diverse activities are performed, whether within the airside, terminal or landside zones. Airport owners or statutory bodies/operators need to manage both air transport operations and also real estate investments and various construction projects [4].

A variety of people, project stakeholders, management processes, tools and techniques are involved with airport activities and contribute to accomplishing construction works. Their management, interaction, communication and development require the application of efficient and effective strategic management tools and techniques in order to achieve project success. Internal project activities, external environment and human-related factors are considered to be major elements that contribute to a construction organization's ability to attain high levels of organizational performance and secure project success [5].

II. CHARACTERISTICS OF AIRPORT CONSTRUCTION

An airport industry is a very large investment with a high level of impact on a region's economic values and development. This is associated with extreme complexities and difficulties that face an airport operator, which is responsible for operation, management and infrastructure development. Ref. [6] cited that airports are becoming a multimodal transportation hub link with large numbers of buildings within substantial areas that constantly require refurbishment and/or expansion in order to meet the community needs, growth and changing needs of the industry. Construction projects within an airport environment therefore represent a fundamental part of its operations. Numerous recent journal articles and publications have dealt with various aspects of managing airport operation. However, despite this theoretical base, there is a lack of rigorous literature that examines the management of airport construction projects and their related issues. Researchers and practitioners through case studies, journal articles and annual reports have illustrated the reasoning behind the challenges that face operators in managing and controlling construction projects [4], [6]-[10].

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A comprehensive review of related literature has revealed the unique characteristics of an airport construction environment; this has led to an underlining of its various challenging and complex factors. According to Ref. [11] infrastructure and transport services are basic ingredients of a country's economic growth, development and production. Adequacy, quality, reliability and quantity of infrastructure and transportation within a country are key factors of its ability to survive and compete globally. The air transportation sector, in particular, has been promoting various industries to expand their business and markets which eventually benefit the region. Other factors, such as cross border investment, increased communications, international market operations and growth in population, travel and tourism, have brought more emphasis on the vital role that airports play.

Security levels in airports are always high, whether in landside, terminal or airside areas. The majority of airport staff face a number of obstacles when, for instance, entering terminal or airside. Supplementary security procedures must be applied to personnel involved in construction projects that would not be the case if working elsewhere. These might include security checks by a specific security agency in the country along with badges and licences for all workers, drivers and vehicles [4]. Insurance policies also differ markedly from ordinary construction sites. Contractors must be fully aware of safety rules and regulations that are not applicable on landside [10]. More challenges and difficulties are associated with expansion and refurbishment projects, which are the most common type of airport construction activity, in terms of the selection of materials, operating and facility systems that must be coherent with the existing area. As an airport is typically open 24/7, construction works can often only be carried out when traffic and passenger capacity is low; normally during inconvenient night working hours.

Airport construction projects have many different stakeholders, all of whom have a significant input during the project life cycle. This is due to large number of activities associated with aircraft and passenger flows [12]. Consequently, reaching an agreement among various demands and requirements is not a straightforward process. Ref. [4] illustrates how several key stakeholders within an airport construction project can drive various construction requirements based on their functions; for instance, terminal coordination, commercial, traffic coordination, customs/security and design.

Various activities and functions within airports impose the design outline and specification to be established and prepared by an airport operator/administrator prior to involvement of construction practitioners [4]. Consequently, designers' and contractors' responsibility levels for design and/or functional quality can be reduced. It may also limit the advantages of their knowledge and technical experiences.

Besides a country's growth and development demands, the reasoning behind many expansion, refurbishment and

new airport projects are plans and preparations to host big sporting events, such as the World, Olympic and Paralympic Games [8]. The scheduled time frame is extremely crucial in such projects; for example, Brazil's airports preparations for the 2014 World Cup and the 2016 Olympic games.

Fig. 1, illustrates the features of an airport construction environment, which distinguish it from any other construction sector and contribute to increase the various challenging and complex factors facing airport operators. Strategic project management seems to play a crucial role in alleviating this tendency and enhancing organization's performance. To achieve this, construction project managers must effectively manage and control project phases, its related activities and resources. Thus, construction organizations in such environments need to develop their traditional project strategies into new, integrated and effective frameworks which require strategic management and human resource competences [13], [14].

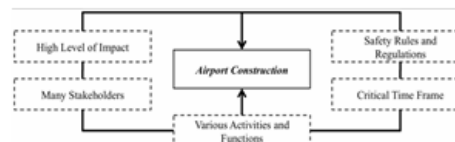


Figure 1. Factors influencing airport construction.

III. PROJECT STRATEGY AND ITS HUMAN-RELATED FACTORS IN CONSTRUCTION

Clients, developers, prime/sub contractors, designers, key suppliers, government/non-government bodies and regulatory agencies are the typical range of stakeholders involved in large construction projects. In order to successfully manage, control and execute such mega projects, diverse players must effectively and efficiently deal with diversity and confront this challenge [15]. The successful achievement of organizational objectives relies on delivering various projects within a scheduled time frame, budget estimate and expected quality. However, it is argued that the traditional drivers of successful project management are no longer adequate to guarantee project success and eventually reach organizational goals and objectives [16]. Instead, the implementation of effective project management and human-related strategies is the most appropriate approach for the current business environment where most projects are associated complexity and uncertainty [13], [17]. Indeed, project managers who follow traditional ways of managing and executing construction projects often give little attention or even disregard the allocation of human-related factors within their management agendas. Instead, they focus on time, cost, and quality. This behavior will have a significant impact on different expectations, as no project would exist without people inputs.

Hence, with the various challenges and difficulties linked to airport construction, and all the different expectations associated with project outcomes, when an

effective and integrated project strategy exists, an effective and efficient working environment would result. This is dependent upon the project stakeholders and employees at all levels being structured to facilitate effective lines of coherent communication. Accordingly, the integrated interplay between project strategy and its human-related factors is the often overlooked factor of success in strategic project management where managers structure a framework of winning that involves a unique approach to strategic project management practice.

IV. RESEARCH THEORETICAL FRAMEWORK

An effective and efficient approach to mitigate specific problems associated with airport construction projects is therefore needed. The proposed research framework is composed of a set of coherent concepts formed from several components and organized in a manner that makes them interact in order to enhance management practices and seek to achieve project success and long-term business goals.

Each component aims to improve one or more aspects that impede the progress of project management and cause certain obstacles. It further breaks down into several sub-modules, which explain the mechanism of applying the main component.

The theoretical framework, as shown in Fig 2, has integrated various existing theories associated with project strategies and strategic human resource management [18]-[24]. This aims to achieve the desired framework which offers possible solutions for airport operator's project managers to implement in order to enhance their performance when managing and controlling their construction projects. A detailed and comprehensive examination of interdisciplinary literature has proposed seven drivers of success, their sub-modules represent the independent variables which may influence the effective and efficient performance and completion of airport construction projects towards success, the dependent variables, the influence of high management performance is moderated by the achievement of several project characteristics, the intervening variables.

Further examination of the framework will be achieved through several case study analyses after exploring/investigating different airport project management experiences in order to refine, modify or restructure its instruments. Those case studies are performed under four different airport ownership structures, therefore, the effects of various ownership forms on improving airport organizations' effectiveness when managing and controlling airport construction projects will be also investigated.

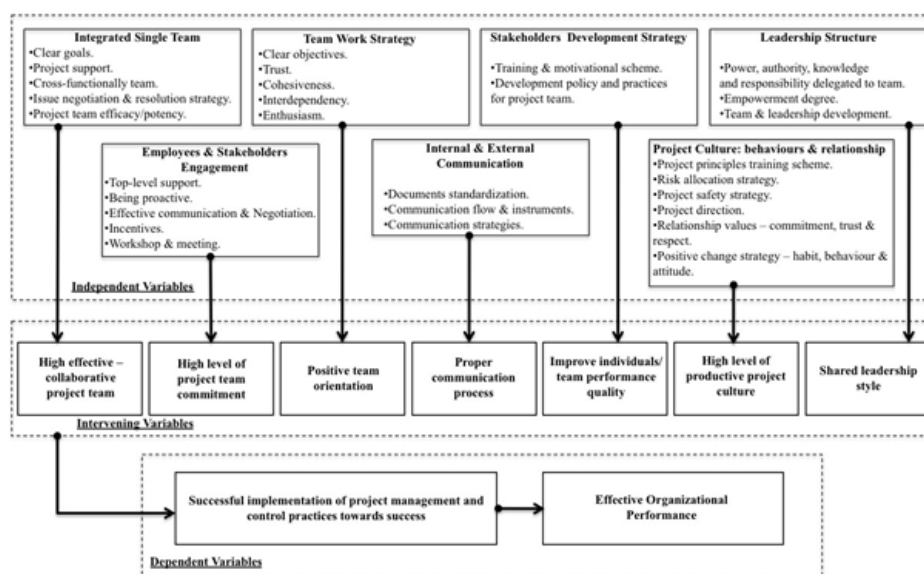


Figure 2. Research Theoretical Framework.

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REFERENCES

- [1] F. L. Bennett, *The Management of Construction: A Project Life Cycle Approach*, London, U.K.: Butterworth-Heinemann, 2003.
- [2] R. Morton, *Construction UK: Introduction to the Industry*, 2nd ed. Oxford, U.K.: Blackwell, 2008.
- [3] L. Ruddock, *Economics for the Modern Built Environment*, USA: Taylor & Francis, 2009.
- [4] A. Ademi, D. Schreidenbauer, E. Meyer, and F. Majdalan, "Managing airports construction projects: Providing an efficient management framework for operators," *Booz Allen & Hamilton Inc.*, pp. 1-8, 2006.
- [5] A. P. C. Chan, D. Scott, and A. P. L. Chan, "Factors affecting the success of a construction project," *Journal of Construction Engineering and Management*, vol. 130, no. 1, pp. 153-155, February 2004.
- [6] F. Bimsekade, R. Biciocchi, B. E. O'Rourke, and C. Vincent, *Creating Smarter Airports: An Opportunity to Transform Travel and Trade*, USA: IBM, 2009.
- [7] *Expansion of Hong Kong International Airport into a Three-Runway System*, Airport Authority Hong Kong, Mott MacDonald, Hong Kong, May 2012, pp. 1-39.
- [8] J. Banks, F. Cook, E. Earls, C. Friedmann, and C. Lo, "The new mega hubs," *Airport Industry Review*, no. 3, pp. 1-18, August 2012.
- [9] J. Banks, F. Cook, E. Earls, C. Friedmann, and C. Lo, "Faster, Safer, Smarter," *Airport Industry Review*, no. 2, pp. 1-20, May 2012.
- [10] A. Khalafallah and K. El-Rayes, "Minimizing construction-related security risk during airport expansion project," *Journal of Construction Engineering and Management*, vol. 134, no. 1, pp. 40-48, January 2008.
- [11] A. Kapur, "Airport infrastructure: The emerging role of the private sector," *The World Bank*, no. 313, pp. 1-100, 1995.
- [12] T. G. Flouris and D. Lock, *Managing Aviation Projects from Concept to Completion*, U.K.: MPG Group, 2009.
- [13] A. D. F. Price, B. V. Ganier, and E. Newson, "Changing strategic management practice within the UK construction industry," *Strategic Change*, vol. 12, no. 7, pp. 347-366, November 2003.
- [14] L. Yankov and B. H. Kleiner, "Human resources issues in the construction industry," *Management Research News*, vol. 24, no. 3/4, pp. 101-105, 2001.
- [15] J. Lampel, "The core competencies of effective project execution: The challenge of diversity," *International Journal of Project Management*, vol. 19, no. 8, pp. 471-483, November 2001.
- [16] A. J. Shenhar and D. Dvir, *Reinventing Project Management*, Boston, USA: Harvard Business School Press, 2007.
- [17] M. A. Sheppeck and J. Militello, "Strategic HR configuration and organizational performance," *Human Resource Management*, vol. 9, no. 1, pp. 5-16, March 2000.
- [18] K. B. Baiden and A. D. F. Price, "The effect of integration on project delivery team effectiveness," *International Journal of Project Management*, vol. 29, no. 2, pp. 129-136, February 2011.
- [19] L. J. Chow, D. Then, and M. Skitmore, "Characteristics of teamwork in Singapore construction projects," *Journal of Construction Research*, vol. 6, no. 1, pp. 15-46, 2005.
- [20] J. Yang, G. Q. Shen, M. Ho, D. S. Drew, and X. Xue, "Stakeholder management in construction: An empirical study to address research gaps in previous studies," *International Journal of Project Management*, vol. 29, no. 7, pp. 900-910, October 2011.
- [21] V. R. Penmal and A. B. Abu Bakar, "The needs for standardization of document towards an efficient communication in the construction industry," *World Applied Sciences Journal*, vol. 13, no. 9, pp. 1988-1995, March 2011.
- [22] L. Crevani, L. Lindgren, and J. Packendorff, "Shared leadership: A postheretic perspective on leadership as a collective construction," *International Journal of Leadership Studies*, vol. 3, no. 1, pp. 40-67, 2007.
- [23] A. A. Tabassi, M. Ramli, and A. H. Abu Bakar, "Training, motivation and teamwork improvement: The case of construction firms," *African Journal of Business Management*, vol. 5, no. 14, pp. 5627-5636, March 2011.
- [24] A. Kadefors, "Trust in project relationships-inside the black box," *International Journal of Project Management*, vol. 22, no. 3, pp. 175-182, April 2004.



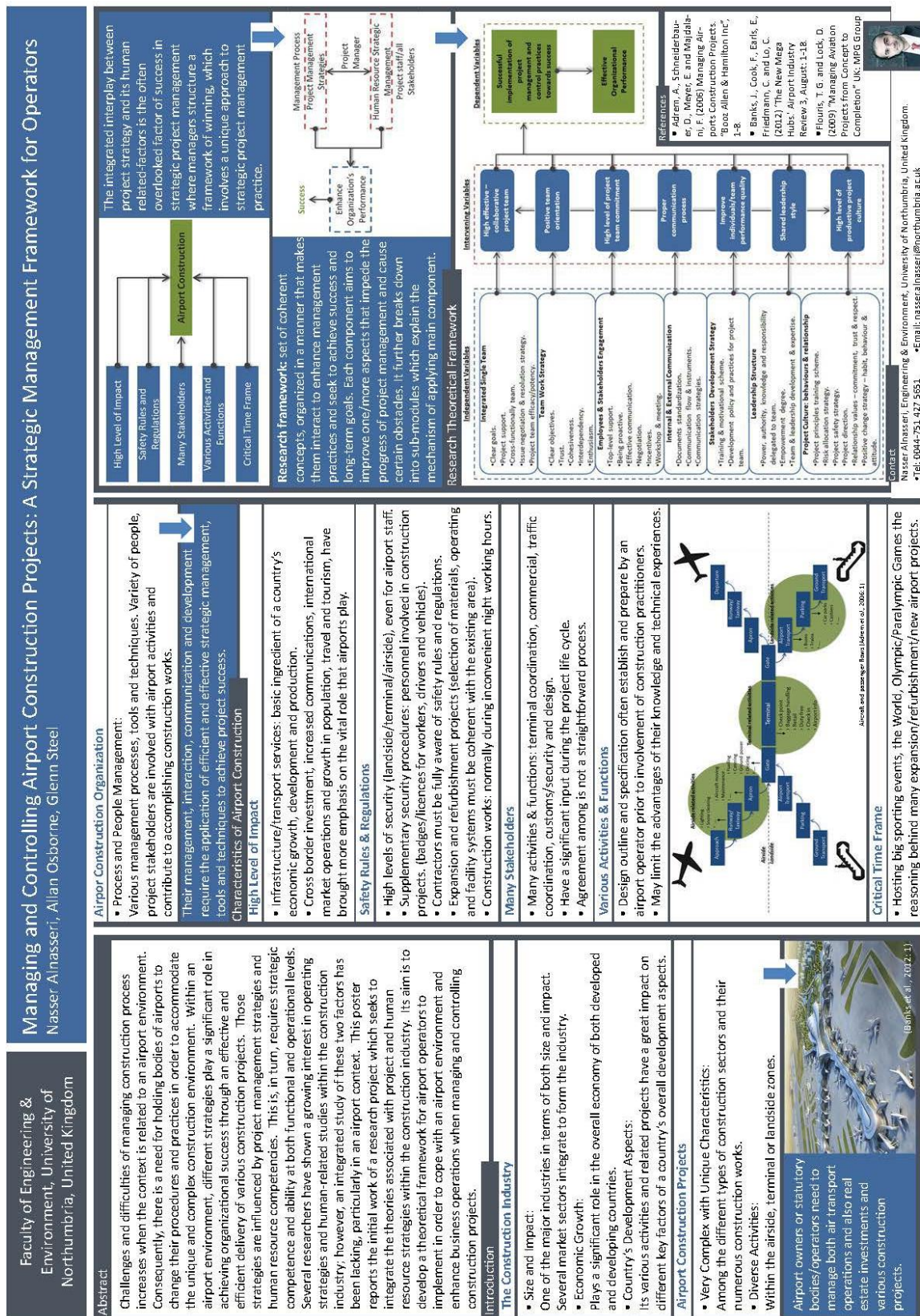
Nasser Alnasser was born in Washington-Seattle, USA, March 1984; Studied architecture degree at KAAU, Jeddah, KSA, 2006. He spent his early part of his career being an architect in private (SBG and Saudi Arabian Airlines) and public (General Authority of Civil Aviation) sector. He broadened his areas of expertise by taking a Professional Project Management course (PMP) following by a postgraduate qualification (MSc.) in Construction Project Management (University of Northumbria). Nasser currently is a PhD researcher in the department of Engineering and Environment at University of Northumbria in UK. Nasser current research interest is management and controlling practices of airport construction projects. In particular, research activity occurs within two interconnected areas; Strategic Management where he focus on project management strategy and its related strategic human factors; and Airport Ownership Structure. Mr. Nasser Alnasser awarded a regional award certificate from Association of Project Management (APM) for his MSc. dissertation. Including a highest dissertation mark prize, 2010. His work has also nominated for the APM Geoffrey Tumble Award, 2011.

18. Appendix R

Managing and Controlling Airport Construction Projects: A Strategic Management Framework for Operators

Poster presented at Northumbria Research Conference held in Northumbria University, Newcastle, United Kingdom, May 2013

Appendix – R



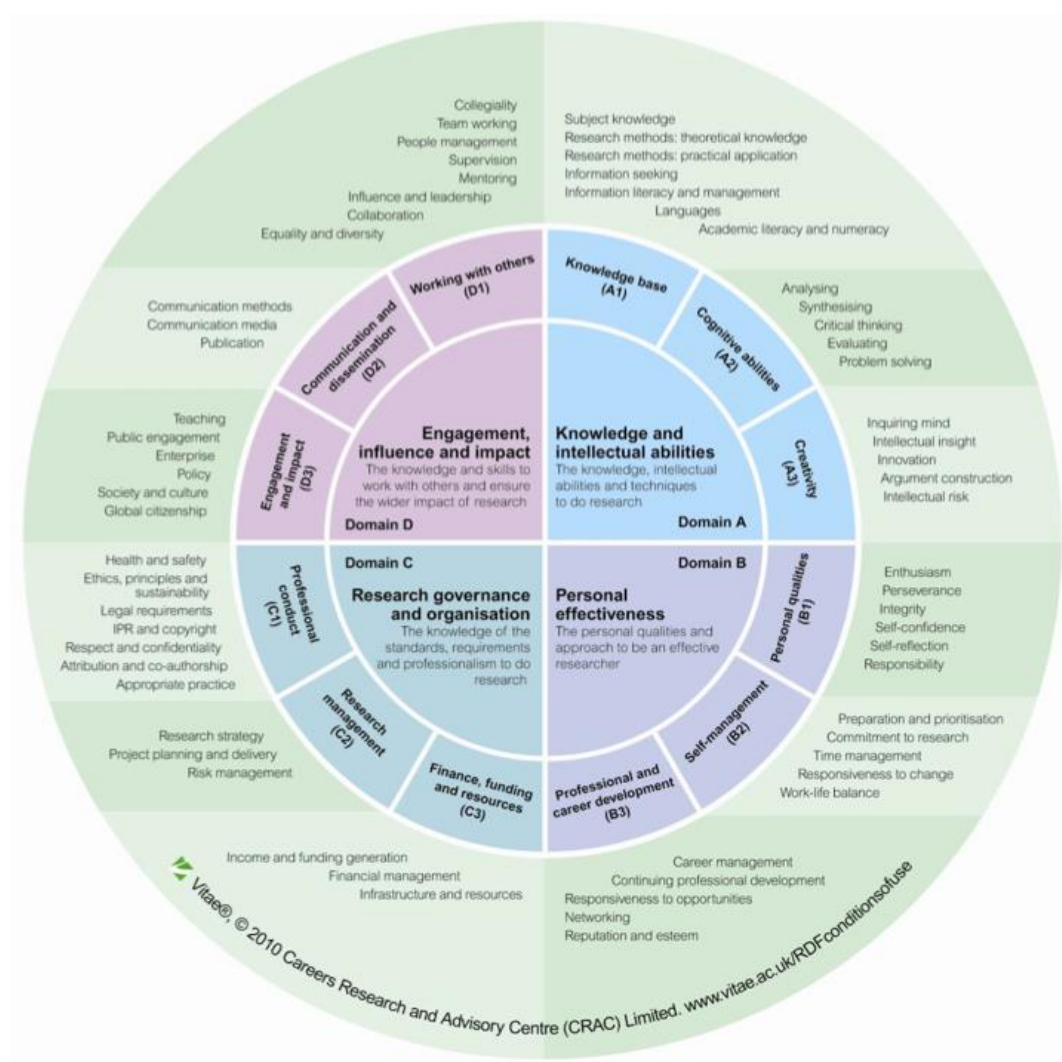
19. Appendix S

Postgraduate Professional Development and Research Training Programme Activities

Details of the Researcher's Completed Development Programme

Appendix – S

Vitae Researcher Development Framework (Vitae, 2011):



The Researcher Completed Development Programme:

PGR Training	Impact on Research	PGR Training	Impact on Research
Induction Programme	A1/A2/B1/B2/C1/C2	Getting published successfully	A1/A2/A3/B1/B3/C1/C2
Library and learning workshops for postgraduate researchers	A1	Research philosophies and paradigms	A1/A2/A3/B1
All in One: time management - working with supervisor - the structure of the thesis	A2/B2/C2/D1	Using Nvivo to analyze textual data	A1
How to be an effective researcher – session 1 and 2	A2/A3/B1/B2/C2/D1/D2	Using Nvivo to analyze media data	A1
Take control: an introduction to managing project for PGRs	A2/B1/B2/C2	Academic writing: writing for publication	A1/A2/A3/B3/C1/D2/D3
Academic writing: writing your research- thinking about thesis	A1/A2/A3/B1/B2/B3/C1/D1/D2	DATUM: data curation life cycle	A1
Introduction to research data management	A1/B2/C2/C1	A guide to public speaking and presenting at conferences	A1/B1/B2/B3/D2/D3
Endnote in a nutshell	A1/B2/C2	Making connections: networking and working collaboratively	B1/B3/D1/D2/D3
Mid point progression guidance session	A1/A2/A3/B1/B2/C2	Making the most out of conference	A1/A2/A3/B1/B3/C1/C2
Literature review planning and researching	A1/A2/A3/B1/B2/C2	To tweet or not tweet? Social media for researchers	A1/B3/C1/C2/D1/D2
Introduction to research poster	A1/A2/A3/B3/D2/D3	Preparing for your viva : the end is insight!	A1/A2/A3/B1/B2/B3/C1/D1/D2
Ethic essential	A1/A2/A3/B1/C1	Nvivo: An advanced course for Nvivo users	A1
Problem and practical strategies and solution	A1/A2/A3/B1/C2	Completing your doctorate	A1/A2/A3/B1/B2/B3/C1/D1/D2